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Surgeon New York State Woman's Hospital, etc.

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It is *malt-extract* prepared from Barley Malt combined with the proper proportion of Hops, that has been for many years the standard medicinal nutritive employed by the medical faculty of Europe, and especially of Germany. Its value has been established by experience, and its use in the treatment of almost all forms of disease of nutrition is constantly extending. We shall continue to devote the most scrupulous attention to the maintenance of the reputation of our malt-extract, by the careful selection of material, and by unwearied personal attention to manufacturing details.

Attention is respectfully directed to the accompanying extract from Ziemssen, and also to our circular and testimonials elsewhere printed.

Very respectfully,

TROMMER EXTRACT OF MALT CO.

From Ziemssen's Cyclopædia of the Practice of Medicine, Vol. XVI., page 474:

"The Malt Extract prepared from Trommer's receipt is designed to fulfill much the same purpose as Cod-Liver Oil, carbo-hydrates (malt-sugar, dextrin) taking the place of fatty matter. The simple (much or little hopped) and the chalybeate form of Malt Extract are coming more and more into favor as substitutes for the oil; they are more palatable and more easily digested, and should, therefore, be preferred in the dyspeptic forms of anæmia. During the last few years Malt Extract has almost entirely taken the place of Cod-Liver Oil in the treatment of phthisis and other wasting diseases, at the Basle Hospital, and we have as yet found no reason for returning to the use of the latter remedy. The Extract may be given from one to three times a day, in doses varying from a teaspoonful to a tablespoonful in milk, broth, beer, or wine."

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Attention is invited to the following analysis of this Extract, as given by S. H. Douglas, Professor of Chemistry, University of Michigan, Ann Arbor.

TROMMER EXTRACT OF MALT CO.: I inclose herewith my analysis of your Extract of Malt:

Malt Sugar, 46.1; Dextrine, Hop-bitter, Extractive Matter, 23.6; Albuminous Matter (Diastase), 2.469; Ash—Phosphates, 1.712; Alkalies, .377; Water, 25.7; Total, 99.958.

In comparing the above analysis with that of the Extract of Malt of the German Pharmacopœia, as given by Hager, that has been so generally received by the profession, I find it substantially agree with that article.

Yours truly, SILAS H. DOUGLAS,
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JAMES B. HUNTER, M. D.

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Original Communications.

Art. I.—"*The Physiological and Therapeutical Effects of Salicylic Acid and its Compounds.*"* By William Oliver Moore, M. D., Assistant Surgeon, New York Eye and Ear Infirmary.

Chemical History.—Salicine ($C_{13}H_{18}O_7$) is a glucoside or neutral vegetable principle, which was discovered in 1830 by Leroux † in the bark of the willow (salix); hence its name. It was afterward found in various species of the poplar, and other trees and plants, by Braconnot. ‡ In 1838, Piria § first prepared and discovered salicylic acid, by melting salicine with potassium hydrate, in which case hydrogen is evolved, and potassium salicylate is formed.

Then Lowig ‖ and Weidmann found it in the flowers of spiræa ulmaria (meadow-sweet), or rather in the volatile oil distilled from it; this oil is identical with salicylol. Later Proctor ¶ showed that oil of wintergreen (gaultheria procumbens) was a salicylous ether, and from it Cahours * in 1844 obtained salicylic acid, by distilling the oil with potash, dividing it into methyl alcohol and salicylic acid.

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* Being the Joseph Mather Smith Prize Essay, awarded by the College of Physicians and Surgeons, New York, 1879.

† "Jour. de Chim. Med.," tom. vi., fol. 341.

‡ "Ann. Chim. Phys.," tom. xliv., fol. 296.

§ "Ann. Pharm.," tom. xxx., fol. 165.

‖ "Jour. pr. Chim.," vol. xix., 286.

¶ "Am. Jour. Phar.," vol. xxvi., p. 68, 3d series.

In 1852, Gerlawd † prepared salicylic acid from anthranilic acid with the aid of nitrous acid; this reaction gives the connecting link for salicylic acid and indigo, anthranilic acid being a result of the oxidation of indigo.

In 1853, Professor H. Kolbe, ‡ of the Royal University of Leipsic, wrote an article on the theoretical speculations regarding the constitution of salicylic acid; in which he foresaw the connection of it and phenol (carbolic acid). It was not, however, till seven years later (1860), that Kolbe § and Lautemann discovered the manner in which to obtain it from carbolic acid; they prepared it by the action of dry carbonic acid gas on heated phenol, while pieces of sodium were dissolving in it. Even then it was considered only as a chemical curiosity, for as yet no definite properties had been ascribed to it; and the method of its preparation was too expensive to allow of its great use. Thus it was that for fourteen years it was buried in the midst of other chemicals, and doubtless forgotten by many, when in 1874 Kolbe ‖ brought to light what had lain buried for so many years in darkness; and to Professor Kolbe is due the credit of the extensive and effective use of salicylic acid; for in this year he modified and simplified his original process, by substituting caustic soda for the sodium, thus making the manufacture of the acid comparatively cheap. The process of manufacture may be divided into two parts: first, the preparation of dry sodic carbolate, with the aid of phenol and caustic soda; second, the heating of the sodic carbolate with carbonic acid gas at a high temperature, as follows:

Saturate exactly commercially crude soda lye of known strength with crystallized carbolic acid, previously fused, and

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* "Ann. de Chim. et de Phys.," (3) tom. x., fol. 327.

† "Chem. Soc. Quart. Jour.," vol. v., 133.

‡ "Ann. der Chem. und Pharm.," lxxxvi., 148.

§ "Ann. der Chem. und Pharm.," cxiii., 125, cxv., 201.

‖ "Deutsche Industrie Zeitung," No. 85, 1874.

evaporate in a shallow iron vessel, taking care that the sticky dough-like mass does not adhere to the bottom of the vessel as it becomes dry; the mass is constantly crushed with pestles, until the sodic carbolate remains as a perfectly dry powder, having a red color, and very hygroscopic. If the sodic carbolate is moist, or contains free alkali or carbolic acid, the result is not good, a dark-colored substance being formed, which undergoing the final process with carbonic acid, gives far less salicylic acid than is in accordance with the calculated carbolate present. The dry sodic carbolate is then either put into retorts at once, or may be kept for further treatment by filling it when hot in vessels which can be hermetically sealed. When in the retort the contents are slowly heated to 100° C., and when this is reached, a slow current of carbonic acid gas, dry, is allowed to enter the retort; the temperature is then slowly increased up to 180° C., and then up to 220 or 250° C. About one hour after the beginning of the operation, carbolic acid will begin to distil, and the process may be considered finished if, at this temperature, no more carbolic acid distils. It will then be found that the carbolic acid amounts to just one half the quantity originally used, the residue in the retort being sodic salicylate, which is dissolved, and on being acidified with an acid yields a brownish-colored crystalline precipitate of salicylic acid. The first acid put upon the market was of this brown color, and it was not until 1875 that the process of decolorizing it was discovered.

Rautert * states that this acid may be easily decolorized by heating it in a retort to 170° C., and then injecting into it a stream of super-heated steam of the same temperature; salicylic acid distils at once colorless, and nothing but a trace of a black resinous mass remains in the retort. Endemann † produces a far lighter product by precipitating at first only about one twentieth of the salicylic acid, which precipitate, being almost black, will remove considerable of the coloring matter of the solution after filtering; on being acidified, the solution yields a lighter-colored acid. The loss of some of the acid does not, however, favor the general use of this

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* "Dingl. Polytech. Jour.," April, 1875.

† "Am. Chem.," vol. vi., 47.

method. The disinfecting and preserving properties of this acid, as shown in the original experiments of Kolbe, brought this once unknown substance into the front rank of the list, and at once introduced it into medicine and surgery.

Medical History.—The medical history of salicylic acid and its compounds dates from July, 1874, for prior to that time no experiments had been made with it, as prepared by the synthetic process of Kolbe. The only record we find of the internal administration of the acid, as derived from its natural source, is the experiment of Berlaguini, who took ninety grains in two days, and he reports tinnitus aurium as the only noticeable symptom, and found that it was partially changed in passing through the system, as manifested in the urine, into salicyluric acid, and a portion of unaltered salicylic acid. Professor Kolbe, arguing from the fact that salicylic acid is by synthesis produced from carbolic acid, and that at a high temperature it can be resolved into it, predicted that it might act as a powerful antiseptic and anti-ferment, and that it would therefore be of great value in diseases of zymotic origin, and possibly be of service in hydrophobia and kindred diseases.

In studying, then, the physiological action of this acid and its compounds, it will be necessary to speak of them in their various aspects, first, as an anti-ferment, and then as an antiseptic. Professor Kolbe's original experiments were made to study the influence of salicylic acid on non-organized ferments, or those which occur independent of vitality, as the production of the volatile oils in mustard and bitter almonds, the effect of diastase, etc. The results of these experiments were quite striking, as small amounts of salicylic acid sufficed to prevent the action of these ferments on amygdalin or myronic acid. If the quantity of the salicylic acid used for these experiments was very small, a slight odor of either bitter almonds or mustard oil could be detected. His other experiments were made upon organized ferments, namely, vital, or those in which living organisms have an important part, such as that produced by yeast, and many of those which occur in putrefaction. These experiments were made upon grape-sugar solutions, beer, milk, urine, and such bodies.

Grape-Sugar Solution.—He found that one grain of salicylic acid in one litre of fluid did not ferment. 0·18 gr. of salicylic acid to one litre of grape-sugar solution was found to retard but not to prevent fermentation; and an addition of 0·20 gr. more of the acid to the fermenting fluid prevented further fermentation.

Beer.—The growth of fungi on beer was found to be prevented by the addition of 1·2 gr. of salicylic acid to one litre of beer, for twelve days.

Milk containing 0·04 per cent. of salicylic acid will sour thirty-six hours later than milk not treated.

Urine, treated with some of this acid, was found, after three days, clear and free from ammonia.

Eggs, laid in water which contained salicylic acid, and then dried and placed on stands, remained fresh for months, kept at the common temperature.

Meat, sprinkled with the powdered acid and then packed in a jar, remained free of odor; the meat, however, had the appearance of having been cooked, owing to the decolorizing influence of the acid. Such meat, subsequently cooked, had no unpleasant taste or smell, as that treated by carbolic acid.

The foregoing experiments were the first made by Professor Kolbe, and the successful issue of each led C. Neubauer, a student of Kolbe's, to follow up this line of investigation, in other experiments on the influence of salicylic acid on yeast, or the fermentation of malt; as a result of these experiments he arrives at the following conclusions: *

1. Wine, still fermenting, should not receive any salicylic acid, as too large quantities are required for effective use.

2. Salicylic acid is of use in wines which are clear and have reached maturity, and are prepared for bottling. When added to such, after-fermentation is prevented.

3. While salicylic acid will prevent diseases of wine, it can not well be used for the curing of wines already diseased.

4. Sure receipts regarding the quantity of acid to be taken for the preservation of one thousand litres of wines, which will

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* "Jour. für Prakt. Chem.," vol. xi., Nos. 6, 7, 8.

keep them permanently free from all disease, can not be given, since the quality of wines, their percentage of alcohol, ferments, and yeast cells, exercise in each case a decided influence.

5. He suggests that wine producers treat various samples of wine by adding to them a solution of salicylic acid, varying from 0·02 to 0·06 gramme to one litre; to then cork the bottles, to expose them to heat and cold, sunshine and shade, placing them in various positions, and, after the lapse of some months, to test them as to their quality.

Professor Kolbe, shortly after his first experiments, announced the remarkable fact that the salts of salicylic acid are not disinfectants, and that the oil of wintergreen, salicin, and salicylol are also without disinfectant power. Julius Müller,* after corroborating some of Professor Kolbe's experiments, made some for the purpose of comparing the disinfectant properties of carbolic and salicylic acids.

On trying the disinfecting properties of 0·1 and 0·2 per cent. carbolic and salicylic acid solutions, respectively, on cut liver, the experiments were in favor of carbolic acid, and, as explained by him, were due to the volatile carbolic acting upon the germs, coming into the open-mouthed vessel from the air, before they reached the liquid in which the liver was immersed.

We would, with Endemann,† consider the non-action of the salicylic acid to be due to the alkalinity of the solution (owing to the bile therein contained), which would partially neutralize and make the salicylic acid inert. Müller succeeded in preventing the action of emulsin by the addition of 0·02 per cent. of salicylic acid, while a 10 per cent. carbolic solution was required to have the same effect.

Professor Thiersch placed in two glasses equal quantities of urine, adding to one a small proportion of carbolic acid, to the other the same quantity of diluted salicylic acid; both at once became free of urate of ammonia, and at the end of two weeks, during which time they stood uncovered, neither had organic matter developed. The former had the carbolic acid odor, the other was entirely free of smell. He also treated various surgical conditions, which we will speak of at more length under the therapeutical effects. Professor Wunderlich took three specimens of dejecta; in the first, nothing was placed; in the second, carbolic acid; and in the third, salicylic acid was added. They were all placed in the open air, and allowed to stand for twenty-four hours. At the end of this time they were each examined microscopically by him, and the examination confirmed by Dr. Wagner.

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* "Jour. für Prakt. Chem.," vol. x., p. 444.

† "Amer. Jour. Chem.," vol. vi., p. 49.

The first specimen showed leptothrix and ciliate infusoria. The second and third were entirely free of organic matter; while the second retained the carbolic odor, the third had no odor at all perceptible.

Godeffroy * proved that salicylic acid is three times as powerful as an antiferment as carbolic acid. He used dough formed of yeast, flour, and water, to which he added various proportions of carbolic and salicylic acids, and noted the time elapsing before fermentation took place, the results invariably proving that fermentation was either prevented or greatly retarded by the addition of salicylic acid.

Professor Kolbe and E. von Meyer † published other experiments, made in order to test more thoroughly the previous statements made by them. They arrived at the following conclusions:

1. The action of salicylic acid as an antiferment depends upon the ratio of the acid and fluid. While 1 gr. salicylic acid will destroy 30 grs. of yeast in one litre of 12 per cent. sugar solution, the same quantity of acid will not destroy the same quantity of yeast, if both are contained in four litres of 3 per cent. sugar solution.

2. The same quantities of salicylic acid which are required to prevent fermentation will also interrupt it in a pure sugar solution when begun.

3. Yeast which has lost its power to ferment by the addition of this acid has lost it for ever, and can therefore, after

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† "Lancet," Oct. 9, 1875.

* "Jour. für Prakt. Chem.," vol. xii., p 133.

the acid has been removed by washing, not induce fermentation again.

4. Salicylic acid which has destroyed yeast fully or partially does not undergo chemical change.

Following these statements of Kolbe's there came from Professors Feser and Friedberger,* of Munich, and Dr. Fleck, of Dresden, contradictory experiments, showing that salicylic acid, given internally as a remedy against putrid infection, is scientifically unwarranted and decidedly hurtful. Professor Kolbe refutes their assertions by saying that the experiments were bunglingly made by poisoning a number of sheep with putrid fluid or salicylic acid (which caused the result, there still exists some doubt), and because of negative results, they immediately condemned the drug as entirely worthless. Various controversies have arisen as to the action of salicylic acid on malt extracts in preventing fermentation; and the apparent discrepancies are due to the fact that, unless the salicylic acid be entirely free and uncombined in the malt extract, it is powerless—for if it combines with the phosphates, it is neutralized. In order, therefore, to have a full action, it is necessary to acidify the solution. Kolbe found that the $\frac{1}{20000}$ gr. of salicylic acid added to rain or river water caused it to remain sweet, when kept in a warm room, for four weeks and upward, when another, not so treated, became unpleasant to the taste long before. A more practical experiment was made in June, 1875, by filling a number of barrels with water containing the acid in proportion of one gramme to twenty litres of water; these were placed upon a ship bound for a one year's cruise. At the expiration of this time, the water was examined and found to be sweet and free from organic matter. Such properties as these, taken in connection with the fact that it is entirely odorless and tasteless, have developed many uses for it outside the realm of medicine and surgery. It prevents the souring of wines, washes, and beers of the brewers, and prevents or averts the putrefactive agencies which are so troublesome and destructive to the glue manufacturers.

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* "Archiv. f. Wissen u. Prakt. Theirheil," Heft 2, 8, 4, 1875.

Having thus considered the action of salicylic acid, as an antiferment, at some length and minuteness of detail, we will summarize the results known:

1. The oil of wintergreen, salicin, salicylol, and the salts of salicylic acid, do not act as antiferments.

2. Salicylic acid, to act powerfully and effectively, must be free or uncombined in whatsoever solution it is added.

3. While carbolic acid and other antiferments are azymotic, or completely arrest fermentations of the vital kind (produced by yeast), they are powerless with the chemical processes. Salicylic acid is more effective with the vital ferments, and equally effective with the chemical.

4. Salicylic acid has the great advantage of being both odorless and tasteless, whereas carbolic acid has not only a disagreeable odor, but an irritating taste.

As an Antiseptic.—That many of the foregoing statements are true of the acid as an antiseptic, as well as an antiferment, all are aware, yet we would speak further of some special experiments made to show its antiseptic properties.

Dr. Ludwig Letzerich* made some interesting studies on the effect of salicylic acid upon bacteria and micrococci, by placing under the microscope portions of fluid containing these organisms in abundance, and allowing solutions of salicylic acid to come into contact with them. He used solutions of four degrees of strength, viz., one part of acid and one of spirit, in 120, 90, 60, and 40 parts of water. The weaker solutions arrested the movements of the bacteria gradually, while with the stronger solutions the arrest of movement was instantaneous. He† also found that bacteria and micrococci obtained from the urine of diphtheritic patients, and placed in a closed vessel, with salicylic acid in solution—1 part of acid and 59 of water—when examined after an interval of five months, were lying dead at the bottom of the vessel. Litzerich employed this acid in seven cases of diphtheria, and with good result. Fontheim has used it in thirty-two cases, with no deaths, and claims to have shortened the duration of the disease eight days in bad cases. Contagious diseases of animals have been successfully treated by the acid by Professors Zurn and Friedberger.

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* "Brit. Med. Jour.," March 6, 1875.

† "Central. für die Chir.," No. 8, 1876.

Professor Thiersch* made some experiments in the Leipsic Hospital as to the antiseptic action of this drug, and its use in surgery. He says that when sprinkled, either by itself or mixed with starch, on contused wounds not yet cleansed, and on scurfy gangrenous surfaces, salicylic acid destroys for a long time the putrid odor, without any inflammatory action of importance. He has also performed operations using a spray of the acid during the time, and at the end of six days the secretion from the wound was without smell, the bandage having been in place meanwhile. Professor Thiersch considers salicylic acid fully equal to carbolic acid as a preventive of putrefaction in surgical treatment; it surpasses the latter on account of its being odorless and less irritating. He has prepared a salicylic wadding to take the place of carbolized gauze in the Lister antiseptic method. Dr. G. B. Orr† reports a case of severe dysentery, where there was incontinence of fæces, and in consequence the bed became the receptacle, the odor resulting being very horrible; but by sprinkling a solution of salicylic acid (1 grain to 100 parts of water) upon the bed, the smell was entirely removed. A recent case to the same point is reported of a patient at Bellevue Hospital‡ with hemiplegia, where there was incontinence of fæces, which were peculiarly offensive; in this case the drug was administered internally with decided results, all odor being entirely destroyed. It has also been employed to wash the feet, to prevent the offensiveness arising from the butyric, valerianic, and other related acids in sweat. Professor Kolbe suggested the value of salicylic acid as a dentifrice and mouth-wash, that it might destroy all bacteria lodged in the teeth, and also remove any disagreeable odor coming from the breath. This suggestion was acted upon by Dr. Buch§, of St. Petersbürgh, who prepared a dentifrice, composed of three parts salicylic

* "Volkmanns Sammlung Klin. Vorträge," Nos. 84, 85, 1875.

† "Clinic," November 7, 1874.

‡ "Med. Rec.," N. Y., vol. xi., p. 364.

§ "Boston Jour. Chem.," August, 1878.

acid to one thousand of water; he found that, after using it a few weeks, a curious sensation manifested itself in the mouth and upon the teeth, they being softened and having a gritty substance upon them. The supposition is that the salicylic acid combined with the lime in the teeth, thus forming salicylate of lime. For transient use, therefore, it may do to use it as a mouth-wash; but as a permanent toilet article, it is decidedly injurious to the teeth. Dr. Benecke, of Marburg, has proposed to test the internal action of salicylic acid upon ferments, and such as cause disease, and whether by its use they can be made inactive. He suggests to use the acid before and after vaccination, and ascertain whether the effects of the lymph can be allayed by the use of this medicine. Of the results of such experiments we have seen nothing as yet reported. Acting upon the above suggestion, we took two subjects who had never been vaccinated, healthy, and each five years old. Care was then taken to obtain perfectly reliable bovine virus, freshly taken from the calf. One large quill was obtained that could be divided into three equal parts. No. 1 was vaccinated with one third of the quill, and allowed to go his way without further treatment, the result being a perfect success. No. 2 was put under treatment two days before vaccination, taking one grain salicylic acid in pills three times a day; he was then vaccinated with another part of the quill used upon patient No. 1. During the week following vaccination, this patient took two grains salicylic acid in pills three times a day; this same dose was also continued for three days after time had elapsed for the maturing of the pock. At the point of vaccination, only a slight redness could be seen, and no evidence of its having "taken"—whereas No. 1 had all the evidences of a well-marked pustule. That this might have happened had not the salicylic acid been administered, we are well aware, having often seen it occur. That the salicylic acid was really absorbed into the system was determined by testing the urine for it by means of the perchloride of iron. To determine, therefore, whether the vaccination failed because of the salicylic acid in the system, or from improper or carelessly made application of the virus, the patient was again vaccinated, with the remaining third of the quill used upon the first occasion. All traces of the acid had, however, disappeared from the urine before this second experiment was tried. At the expiration of the usual time, the arm showed all the evidences of a healthy and normal pustule. We simply state the facts, knowing that the experiments are too few to warrant any positive assertion, yet they seem to bear out the suggestion made by Dr. Benecke, and the general testimony in favor of this acid as an antiseptic agent. M. Limousin[*] presented to the Société de Thérapeutique various solutions of medicine for hypodermic use, one a solution of hydrochlorate of quinine in distilled water, which had been made some weeks, and was found to be full of germs, consisting of algæ and confervæ, while another solution made at the same time, to which salicylic acid (1 part to 2,000 of water) had been added, was perfectly clear and unaltered. That such a small proportion of the acid is harmless in hypodermic injections it is hardly necessary to remark; practically, this use of it will be of great value.

That much more might be added to place salicylic acid at the head of antiseptics, we well know, but let what we have said suffice. We have thus far spoken of the action of this drug in relation more particularly to substances outside the animal economy; we will now speak more fully of its action on animals and man.

Action on Animals.—Professor Zurn[†] gave daily for several days to rabbits, giving the last dose shortly before killing them, a solution of 15 grains of salicylic acid in from 100 to 200 parts of water. On post-mortem examination, he found no inflammation of the intestinal mucous membrane, as observed by some. The same solution destroys acari in twenty minutes.

Drs. Chirone and Petrucci[‡] publish an account of some experiments, made in the University of Naples, on the action of salicylic acid and salicylate of soda on warm-blooded animals —dogs and rabbits—and cold-blooded animals—frogs. They sum up with the following conclusions: 1. The biological action of salicylic acid and of salicylate of soda is identical; but with the former the local effects, with the latter the general effects, are more marked. 2. Salicylic acid, both free and in the state of salicylate, when administered in small doses lowers the temperature, but within restricted limits; in larger doses, it does not lower the temperature, but sometimes considerably increases it. 3. Animals subjected to the daily use of salicylic acid and salicylate of soda rapidly become emaciated and lose weight. 4. The heart-beats in frogs are reduced in number, especially by salicylate of soda; but in mammalia, it sometimes retards, sometimes accelerates the heart's action, independently of the dose. With free salicylic acid the number of heart-beats is, in most, constantly reduced. 5. Salicylic acid almost constantly reduces the number of respirations; salicylate of soda ordinarily first increases, and then diminishes the number. The rapid diffusion through the system of salicylate of soda, which its action and rapid excretion suggest, led MM. Ch. Livon and J. Bernard* to experimentally examine its action. They confirm the conclusions of other observers regarding the action of the salicylate on the conscious sensibility, the production of tetanic contractions and convulsive movements, and disturbances of respiration, and of the cardiac pulsations, due to the alteration of the reflex action of the medulla and cord. Their experiments were, however, particularly directed to the diffusion of the salicylate in the body, and the means of its elimination. For detecting the salicylate they used the perchloride of iron, which remains the most delicate reagent known. In the first experiment, ninety grains of salicylate of soda were injected into the stomach of a dog; the œsophagus was tied; two hours afterward, the salicylate was found in the saliva. In the second experiment, one hundred and fifty grains were injected into the stomach, and an hour afterward the salicylate was found in the bile. In the third experiment forty-five grains of salicylate were injected into the femoral vein, and an hour later it was found in the bile. In the fourth experiment, one hundred and eight grains were injected into the stomach, and four hours later the salicylate was found in the pancreatic juice. In the fifth experiment, two centigrammes were injected under the skin of a guinea-pig, and one hour afterward it was found in the milk. The saliva, bile, and the pancreatic juice were collected by means of fistulæ. The fæces and urine also showed evidences of the salicylate. In all the experiments upon dogs, it was found that the cerebro-spinal fluid contained salicylate, even after several hours had elapsed. This fact may explain the cerebral symptoms, sometimes seen as the effect of large doses, as the presence of the salicylate in this fluid, which bathes the central organs of the nervous system, would naturally account for them. By the injection of from two to ten centigrammes of the salicylate through the occipito-atloïdean ligament into the spinal canal, all the phenomena of salicylic poisoning were rapidly obtained. The precaution was first taken to withdraw an equal bulk of the cerebro-spinal fluid, so as to prevent compression of the cord. For the sake of controlling the experiment, simple water was in another experiment injected in the same manner, with the effect of causing only prostration, and not the tetanizing effects of the salicylate.

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[*] "Paris Medicale," April 20, 1876.

[†] "Jour. für Prakt. Chem.," ii., p. 215.

[‡] "Commentario Clinico di Pisa," Jan., Feb., 1878.

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* "Lancet," August 31, 1878.

Dr. H. Köhler * set himself the task of determining whether salicylic acid alone, or both it and the salts, possessed the power of lowering the temperature in healthy dogs, and was led in the first instance to notice its effects upon the respiration, and second upon the circulation. He found that, both in dogs and in rabbits, salicylic acid and sodium salicylate, when injected into the stomach or into the blood, rendered the respiration slower, apparently by depressing the excitability of the sensory nerves—that is, the branches of the vagus in the lung—leading to asphyxia by carbonic acid poisoning. In regard to the circulation, he found that, when quickly injected in large quantities, the blood pressure rapidly sank almost to zero, followed by convulsions and death, or in some cases by great retardation of the cardiac movements, with sphygmographic curves of immense height,

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* "Med. Chir. Rundschau." Heft 9, Jahrgang 18.

and a more gradually occurring fatal issue. In regard to salicylate of soda, though not acting as rapidly or powerfully as salicylic acid, its effects are essentially the same. In reference to the lowering of temperature, he found that in healthy rabbits, cats, and dogs, the injection of from six to ten cub. cent. of salicylic acid or sodium salicylate into the jugular vein, or the injection of from ten to twenty cub. cent. of solution of salicylate of soda into the stomach, caused a depression of temperature of 5° Fahr., just as occurs in man in the febrile state. He considers the action of these substances, in reducing the temperature, to be due to some influence on the vaso-motor nerves, leading to dilatation of the peripheric vessels, and consequent lowering of the temperature of the blood; this hypothesis affords an explanation of the congestion of the head, tinnitus aurium, profuse perspiration, and diuresis observed in many animals.

We have thus seen that both salicylic acid and its soda salt, when injected into the blood of rabbits, not only causes a fall in the blood pressure, but also a marked diminution in the frequency of the pulse, and also in that of the respirations; but that whereas the soda salt acts equally well, whether injected into the blood, or taken by the stomach, the salicylic acid has no effect, when given by the stomach, either in reducing the blood pressure, or retarding the pulse. Köhler* therefore concludes that it is certain that salicylic acid becomes converted into its soda salt by combination with the alkali present in the intestinal secretions, and that it acts in the blood as such.

The reason why a solution of the acid injected into the stomach of a rabbit remains inactive is probably due to an inefficient amount of alkali to supply an effective dose of salicylate of soda. If it be true, as stated by Binz,† that salicylate of soda is converted into salicylic acid in the blood, by the nascent carbonic acid there contained, it matters very little whether salicylic acid or its soda salt be administered, as in the blood it exists as the same substance.

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* "Central. Med. Wissen," Nos. 10, 11, 1876.

† "Pract.," June, 1876.

Action on Man.—Professor Kolbe, to prove the innocuousness of salicylic acid, took for several consecutive days seven and a half grains daily in water and spirit of wine, without the slightest unpleasant effect. After an interval of eight days he took for five consecutive days fifteen grains daily, and then for two days twenty-three grains in alcohol each day. The digestion was perfectly normal, and at no time was there the slightest discomfort. The experiment was repeated by Professor Kolbe and eight of his students all at the same time. Each took on the first day fifteen grains, and on the second day nineteen grains. Not one of them was able to observe the slightest derangement of any organ. Salicylic acid is not absorbed through the skin. Professer Kolbe took a bath containing, in 250 kilogrammes of water, 250 grains of salicylic acid; he remained in the bath ten minutes. The urine, though carefully examined for the rest of the day, was free from salicylic acid. No bad effects of this substance on the skin were perceptible. Salicylic acid, when administered in solution by the mouth, causes irritation of the fauces and throat, and the aftertaste is often very unpleasant. Dr. John A. E. Stuart * found a characteristic catarrh of the nasopharynx to follow, whether the acid was taken by the mouth or given per rectum. He considers it a valuable fact in regard to the treatment of diphtheria by this acid.

Antifebrile Action of Salicylic Acid and Its Compounds.—Since 1875, when Dr. Buss, of Basle, † Dr. Butt, of St. Gall, and Dr. Furbringer, of Heidelberg, called the attention of the profession to the antipyretic action of salicylic acid and its compounds in febrile affections, and also in healthy subjects, as claimed by some, many experiments have been made. Dr. Butt ‡ describes the acid as almost equal to quinine as an antipyretic, and states that he has given it in doses of from sixty to one hundred and twenty grains in typhoid fever, erysipelas, acute rheumatism, etc., with the best results. Drs. Köhler and Riess § both claim that salicylate of soda reduces the temper-

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* "Brit. Med. Jour.," June, 1876.

† "Deutsche Archiv. für klin. Med.," Heft. v., pp. 457–501.

‡ "Central Med. Wiss.," No. 18, 1875.

§ "Berliner klin. Wochen.," Nos. 50, 51, 1875.

ature in healthy animals and man. Reiss reports the result of twenty-three experiments, made upon seven healthy persons, in which the average reduction of temperature was 0·9° C., in from four to six hours. No influence was noticed upon the pulse. The same author reports the result of its antipyretic effect in 260 cases of typhoid fever; in all of these cases, the action of the salicylate of soda was marked after the first dose, but more decidedly so after repeated doses. In spite of the reduction of temperature, the frequency of the pulse was completely unaffected, except that it sometimes became stronger and less dicrotic. Buss states that patients with fever can take larger quantities than healthy persons, and he frequently gave ninety grains at a dose, suspended like an emulsion in water. A congestive period is described as occurring in healthy persons, after doses of forty-five or sixty grains; in this there is a general feeling of warmth over the whole body, accompanied by general perspiration, and diminished acuteness of sight and hearing. This passes off in about one quarter of an hour, and the tinnitus aurium succeeds about two hours later, and may last some hours, or even a whole day, when the dose has been very large. Copious sweats seem to be an almost constant effect of the remedy (Buss, Riess, Fischer, Goltdammer, etc.).

Collapse has been noticed in a few cases. More particular attention is called to this symptom by Goltdammer, who probably had cachectic subjects to deal with, which would explain the severe effects of the drug; or else the specimen of acid used by him was impure, being partly composed of carbolic acid. In some cases where a very large dose has been given, the rapid reduction of the temperature may explain the cerebral and other unpleasant symptoms. A case of acute tuberculosis, in which the temperature was reduced to the normal by a dose of seventy-five grains, and in which the collapse was very severe and the patient barely rallied, is reported. Another case of typhoid fever in the fifth week, the patient dying after a dose of seventy-five grains, is recorded. It will be noticed that these bad results followed immense doses of the acid. Dr. Ewald, in a report made to the Medical Society of Berlin, on the experiments that he had made in Dr. Frerich's wards with salicylic acid and its soda salt, found that the latter was to be preferred for internal use, as it produced no uncomfortable feeling in the mouth and throat, as does the former. He confirms the results of other observers, finding the temperature was reduced as much as 7·2° Fahr., in from five to ten hours. In one hundred cases of enteric fever, during the height of the disease, the afternoon temperature in eighty was reduced below that of the morning by a single dose of the salicylate of soda given at noon, profuse perspiration commencing five or ten minutes after the administration of the drug. Nausea was noticed in a few cases, and was prevented by the addition of a few drops of chloroform to the medicine, just before it was taken. The appetite remained good in all cases. The action on the pulse and respiration was unnoticeable.

Dr. Moeli * found that the temperature was reduced, but in a less degree, when the salicylate of soda was given by enemata. Hypodermic injections also reduced the temperature. Dr. Nathan, contrary to some observers, found that a considerable influence was produced on the pulse and respirations, both of which diminished in frequency. Dr. Furbinger's experiments show no reduction of temperature in healthy persons, either when salicylic acid or its soda salt is administered. That *salicine*, administered in doses of thirty to ninety grains, lowers the temperature in some febrile diseases, just as certainly as salicylic acid, is stated by Professor Senator and also by Dr. Maclagan. This may be explained by the fact that salicine is converted in the blood into salicylic acid, as shown by the researches of Ranke and Lehmann. Professor Traube and Dr. Stricker found, in cases of acute rheumatism, the temperature would return to the normal in forty-eight hours, frequently sooner. Thus it will be seen that the majority of observers agree in the antipyretic action of both salicylic acid and its salts. Those who differ as to its antipyretic action on healthy persons and upon animals are few; and the discrepancies in statements may be due to the amount and purity of the drug used. That we have, in salicylic acid and its salts, antifebrile remedies second only to quinine, is acknowledged by all. We might add to what we have already said a few facts in reference to its action on the febrile diseases of children, as recorded by Dr. Hagenbach,* of the "Children's Hospital," at Basle. The following quantities have generally been divided into two portions, and given with an interval between them of half an hour or so: for children under one year, fifteen grains; between one and two, from twenty to thirty grains; between three and five years, from thirty-seven to forty-five grains, and so on in proportion to the age. It was administered in most cases at five o'clock in the evening. It was given on an empty stomach, and usually once only in the day. The reduction in the temperature noticed was from 2·7° to 7·2° Fahr. as a rule, less than three hours after it had been taken. It rarely produced vomiting; sometimes diarrhœa was produced, but usually it was only transient. Marked tinnitus aurium and deafness never took place. In the severe forms of scarlatina and typhoid Dr. Hagenbach relies upon this drug, and rarely now uses quinine or cold baths as formerly.

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* "Medical Times and Gazette," March 18, 1876.

We have now shown at some length the antipyretic action of salicylic acid and its salts, and turn for a moment to glance at their action on the heart. That salicylic acid and its soda salt, in small or moderate doses, does not affect the heart, is the observation of most physicians who have used them. Yet it can not be denied that when these substances are given in large doses the cardiac pulsations are influenced. Donemsky,† in Professor Sokolvowki's laboratory at Moscow, considers the action of salicylic acid and salicylate of soda similar to that of digitalis, but preferable to it on account of innocuousness. Salicylate of soda at first increases the heart's action; at a later stage, the force and rapidity diminish. The vaso-motor nervous apparatus of the heart is then paralyzed, while at the same time the pulse becomes weaker and more rapid, or weaker and slower.

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* "Correspond. Blatt f. schweizer Aerzte," No. 15, 1877.

† "Ugeskrift f. Laeger," No. 20, 1877. (Translated by Dr. G. R. Cutter).

An irritation of the vaso-motor center always occurs, from which results an increase of the contractile power of the heart, and of the blood pressure. Its retarding action on the heart is such that, even after section of the pneumogastric, the pulse becomes slower. Respiration becomes hastened under the influence of the sensitive pulmonary nerves; with larger doses, the respiratory center is paralyzed. We may thus, by regarding the sthenic or asthenic character of the fever, and its relation to the vaso-motor phenomena and the local affection, use the drug, either as a tonic, a sedative, or in very large doses as a paralyzer.

ACTION ON THE OSSEOUS SYSTEM.—Dr. Koster,* of Berlin, claims that salicylic acid or its compounds, when administered internally for any length of time, acts as a solvent upon the bony tissues, and that this is evidenced by the increased amount of salts of lime found in the urine of such patients. We have seen only one case reported that would at all seem to prove this statement, viz., a case by Dr. Lilley,† of Hatton, England. It was one of acute rheumatism, under treatment by salicylic acid in moderate doses, which while under the treatment developed necrosis of the tibia. Dr. Lilley ascribes the necrosis to the salicylic acid, and we think unjustly, as in the history of the case there appears evidence of existing struma in the patient, and that the exciting cause of the rheumatism (standing for a long time in a stream of water) was also the primary cause of necrosis. No bad effects have been noticed by other observers.

ACTION ON THE MUCOUS MEMBRANES.—Ulcerations or erosions of the mucous membrane of the digestive tract appear to be of very rare occurrence. Reiss found none, although post-mortems were made in two cases of death from intestinal hæmorrhage during typhoid fever; in these cases it was proved that the blood came from the typhoid ulcers, and not from any erosions which could have been produced by the salicylic acid. One case is, however, reported by Goltdammer, in which six ulcers were found in the stomach of a patient with acute tuberculosis, who had taken in all one hundred and eighty grains of the pure acid. This case may be explained by the lowered state of vitality of the patient's tissues, and also by some impurity in the drug used. Dr. Wolffberg, connected with Professor Ziemsen's clinic, reports that he found hæmorrhagic erosions in the mucous membrane of the stomach and duodenum, in several persons who died after they had taken the acid made up in wafers. It is however to be stated that, in all of the above cases except one, the erosions occurred in patients affected with typhoid fever; and that it is therefore hard to decide whether these points of ulceration were due to the remedy or the disease. The discrepancies between the statements of good observers, in reference to the action of salicylic acid, is largely due to the differences in the samples of acid used. No fear need be apprehended of ulceration of the intestines if moderate doses be employed.

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* "Berliner klin. Wochen.," July 3, 1876.

† "Lancet," October 27, 1877.

POISONOUS SYMPTOMS OF SALICYLIC ACID AND SALICYLATE OF SODA.—Professor Petersen,* of Kiel, reports the following case of acute poisoning by salicylate of soda. The symptoms were more marked in this case than any other previously reported. The patient, a strong and blooming girl aged fifteen, had had a resection at the ankle joint, the operation being done on the 11th of January. It did well up to the 14th inst., when the wound smelt offensive. On the 19th she took several grain doses of salicylate of soda, without much effect. From the 22d the patient took one drachm of the medicine. On the 25th, in consequence of a misunderstanding, the patient had taken altogether, from 6 A. M. till the evening, four hundred and one grains, or from 6 P. M. three hundred and forty grains. The last two doses of sixty grains each were, fortunately for her, vomited almost immediately on taking. When Professor Petersen saw her first, in the forenoon of the 26th, he was struck by her anxious expression; she was restless, the face flushed, pupils very widely dilated, and scarcely responsive to light, with considerable divergent strabismus; respirations nearly sixty per minute, but not shallow; the pulse little quickened, if at all.

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* "Deutsche Med. Wochen.," January 18, 1877.

The sensorium free, but speech difficult. Temperature at 6 A. M., 98·9° Fahr.; at 10 A. M., 99·3° Fahr. At noon she began to be delirious; temperature 101° Fahr; bromide of potassium ordered. At 2 P. M. temperature 102° Fahr; more bromide given. At 4 P. M. temperature 101·8° Fahr.; bromide again repeated. A peculiar, regular alternation of symptoms was noted; at one time she had hallucinations, then lay in an uneasy, half wakeful condition; and at another, she was quite conscious for a few moments, recognizing those around her, though she seemed unable to see far. She spoke hoarsely and indistinctly, she stammered, stuttered, and seemed unable to pronounce many words, even when they were said to her first. There was a glazy look to the eyes; the pulse became very irregular, sometimes very quick, sometimes almost as slow as normal, and then again small and weak. On the 27th she was somewhat better, with a temperature of 102° Fahr., respirations thirty-six, pulse irregular, about one hundred and twenty. The urine was, as on the preceding day, of dark smutty brown color, giving reactions of salicylic acid, and containing about two per cent. of albumen. On the head, face, neck, and the legs, there was a good deal of redness in circumscribed patches; the redness disappeared on pressure, but returned again.

Mydriasis and strabismus divergens were less evident, otherwise there was little change. On the 28th the red patches of erythema had vanished from the original spots, but others had arisen. There was a bed-sore, about the size of a dollar, and rather deep, in the middle of the lumbar region. As yet the patient had had no quiet sleep. Urine still albuminous, and of a dark brown color, pulse, respirations, and temperature as before. On the 29th the delirious intervals were further apart, and she was less apathetic, less difficulty of speech. February 4th the urine for the first time appeared normal; her mind was clear, appetite good, and she was free of distressing symptoms. This case was treated by bromide of potassium in small doses. Other cases of subacute poisoning are reported, e. g., Goltdammer * had symptoms after one of

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* "Berliner klin. Wochen.," No. 4, 1876.

his patients took only seventy-seven grains, while Stricker* had a patient who took eight hundred and forty grains in twelve hours, without any severe symptoms. Schumacher† mentions lively delirium after fifteen grain doses of salicylic acid, with tormenting and painful hallucinations of sight. Tinnitus aurium is also often a prominent symptom. Two cases are reported by Dr. Tuckwell‡ of acute rheumatism treated by salicylic acid, in which a peculiar train of nervous symptoms was developed after the administration of the medicine. In both, the immediate effect of the acid on the rheumatic symptoms was remarkable, also a rapid falling of temperature and subsidence of pain and swelling in joints. But in both alike came on other symptoms, humming and buzzing in the ears, with gradually increasing deafness; a peculiar loud, deep, and sighing respiration, restlessness increasing to delirium, not unlike delirium tremens, with involuntary evacuation of urine and fæces; an olive green color of the urine. No sooner was the medicine withheld than the strange symptoms ceased. Stricker § reports a case where the hallucinations were particularly cheerful and hilarious. The proper treatment for such cases is discontinuance of the medicine, and internal use of potassium bromide. As doubtless many of the poisonous symptoms above narrated are due to impurities in the salicylic acid, great care should be used to obtain a perfectly pure article for administration.

THERAPEUTICAL EFFECTS OF SALICYLIC ACID AND ITS COMPOUNDS.—Fashions exist in medicine as well as in the world of dress. That this is true, no one will doubt who looks over the past ten years, and remembers the many drugs that have been presented, all having marvelous qualities and specific effects. Of these, how many are now retained and in practical use? Where is cundurango, and where are many other once vaunted drugs? Still, it is our duty, as the chemists present new substances to our notice, to try carefully and patiently their qualities and effects, and to discard them only after repeated and constant failures. In 1874 Professor Kolbe announced the production of salicylic acid, by synthesis from carbolic acid and caustic soda, by the aid of carbonic acid gas, and suggested its use as an antiseptic and an antiferment. Shortly after this, Dr. Buss, of Basle, announced its antipyretic action. This announcement was followed by a host of observers, making various trials of the drug. One of its greatest uses has thus far been in acute articular rheumatism, and we will speak, first, of its action in this disease.

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* Berliner klin. Wochen. No. —, 1876.

† "Deutsche Medic. Wochen.," No. 18, 1876.

‡ "Lancet," November 11, 1876.

§ "Berliner klin. Wochen.," No. 8, 1876.

Acute Articular Rheumatism (*Polyarthritis Rheumatica Acuta*).—We can not do better than quote the words of Dr. Broadbent, of St. Mary's Hospital, London. "Few diseases," he says, "have had brought against them a heavier armament of drugs than has acute rheumatism. It has been stormed by alkalies and salines, attacked by acids, assaulted by perchloride of iron and quinine, surprised by propylamine and elaylchlorüre, drained by venesection and purgatives, flooded alternately with hot and cold water, alarmed with blisters, blasted with hot air, lulled with opium, and appeased by chloral hydrate. In addition to these, it has been constantly harassed by the raids of lesser foes, such as lemon juice, citric acid, belladonna, and iodide of potassium. Now, another apparently powerful enemy has appeared, in the shape of salicylic acid and its salts." During the latter part of 1875, this drug was used for acute rheumatism in Germany; doubtless by many, but the first cases so treated and reported occurred in Professor Traube's clinic. They were reported by one of his assistants, Dr. Stricker,* who proclaims boldly that the experience he has obtained can not be attributed to chance, and that salicylic acid must, therefore, apart from its antipyretic action, be looked upon as having a specific action on acute rheumatism. He administers the salicylic acid in wafers, in doses of from seven to fifteen grains every hour, until the diseased joints can be moved without pain. Beginning the treatment in the morning, it is occasionally complete before night. Dr. Stricker's observations were made upon peculiar cases. 1. Rheumatic polyarthritis; third attack, with insufficiency of aortic valves; complete arrest of the disease in twenty-four hours. 2. Acute rheumatism, running a slow course, with slight rise of temperature; when in hospital, rapid swelling and pain in several of the large joints, with increase of local temperature; cure in forty-eight hours. Dr. Riess* next contributes an article on the action of this acid, giving the experience of its use on twenty-seven cases, inmates of the Berlin General Hospital. The time required for complete cure, i. e., removal of pain, swelling, and stiffness of the joints, was from three to fifteen days. In April, 1876, Dr. Broadbent,† of St. Mary's Hospital, London, reported the results of a few cases treated after Stricker's method. He says: "According to present experience, rheumatic fever, when treated by this drug, is an affair of two or three days." One of the first to use this acid in acute rheumatism, in the United States, was Dr. C. P. Putnam,‡ of Boston. In Bellevue Hospital Dr. A. Jacobi treated a number of cases, and was followed by Professor Alonzo Clark, § who reported the results of a number of cases treated by means of salicylate of soda. He says: "Its influence upon the temperature and pulse was as marked as its power to relieve pain." Since then all the hospitals have employed either the acid or some of its salts in this disease. In France, M. Germain Sée ‖ has been the great champion for the acid, not only in acute but also in chronic rheumatism and gout. He believes that, besides being an analgesic, it promotes absorption, and prevents the reproduction of morbid products. That salicylic acid and its salts arrest and cut short the course of acute rheumatism sooner than any other drug before used, we think will be borne out by the statistics presented. It not only diminishes the temperature, but, above all, acts most remarkably, stopping the pain and diminishing the swelling of the joints. Statistics show that the average duration of pain is barely three days, while the temperature remains permanently normal after the second day. The following case illustrates the action of salicylic acid in a simple case of acute rheumatism: J. F., aged thirty-two, domestic servant. First taken ill on March 28th. When first seen, April 2d, she had severe pain in the left ankle, the right knee, which was greatly swollen, and the right wrist and elbow. The heart's action was frequent, but with normal sounds; temperature 103° F.; pulse 120. Salicylic acid was ordered in seven-and-one-half-grain doses every hour for six hours. At 6 P. M., after having had four doses (thirty grains), the pain in the joints was not so bad, pulse the same, temperature 102·2° F. At 11 P. M., had slept three hours; temperature 101·2° F.; pulse 100. April 3d. Perspired freely during the night; temperature 99·8° F.; pulse 96; pain much less. 4th. Better. Joints not painful but only stiff on movement. Temperature 98½° F.; pulse 84. Acid ordered three times a day, in seven-grain doses. 5th. Patient up and walking, with no pain; temperature and pulse normal. Patient was kept in doors for four days longer, and then allowed to go out, the medicine being kept up for ten days after pronounced convalescence. In this case pain had entirely disappeared in less than three days, and the complete treatment only included a week. Such cases could be multiplied many times if necessary. Another question arises, however, which is of greater moment than relief of pain and reduction of temperature, and that is, does salicylic acid or its compounds prevent or arrest cardiac lesions in acute rheumatism? In answering this question, those cases which have been affected with disease for some days without any treatment, should be carefully separated from those under treatment from the very start. For if it be, as stated by Dr. Alonzo Clark, that the heart complications are most apt to occur during the first five days of the disease, then those not under treatment prior to that time would, probably, not be affected by the acid, whereas those seen from the commencement of the rheumatism would naturally escape the heart complication. That this latter statement is true, we will try and prove by reported cases. So far as present experience goes, the results of the salicylate treatment do not contrast unfavorably, in this respect, with other methods; on the whole, the comparison may be deemed extremely favorable.

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* "Berliner klin. Wochen.," No. 1, 1876.

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* "Berliner klin. Wochen.," No. 7, 1876.

† "Lancet," April 8, 1876.

‡ "Boston Med. and Sur. Jour.," Feb. 24, 1876.

§ "Med. Rec.," vol. vi., p. 663.

‖ "Union Medicale," July 3 *et seq.*, 1877.

Riess reports a case of marked endocarditis on admission, which was uninfluenced by treatment, leaving slight mitral insufficiency. Dr. Brown,[*] of the Boston City Hospital, in one hundred and six cases of acute rheumatism treated during the past year, found that cardiac lesions, which occurred after the admission of the patient, amounted to only 4·76 per cent. Dr. E. H. Jacobs[†] reports that, out of three hundred and twelve cases collected from various sources, only nine cases, or three and a half per cent., were attacked with cardiac complications after treatment was begun. Reiss reports a case in which pericarditis commenced when the patient was admitted, and which entirely disappeared under the continued use of the acid. Dr. Whipman[‡] reports a severe case of acute rheumatism, complicated by pericarditis and bronchopneumonia, relieved by salicylate of soda, when apparently dying, after a fair trial of four weeks of the alkaline method. In this case the pericarditis was cured. In passing, we can not but call attention to a number of cases of rheumatism reported by Dr. Blake.[§] In these cases, which were under the alkaline treatment, the cardiac lesions, developed while in hospital, were rather over thirteen and a half per cent. This contrasts strongly with those reported by Dr. Brown, in the same hospital already referred to. It will thus be seen that, although an absolute immunity from cardiac affections can not be claimed, the majority of cases escape without the heart trouble. Stricker says the administration of a certain quantity may be expected to prevent secondary inflammation of serous membranes, especially the endocardium. Any drug that shortens the inflammation in the joints, and reduces the temperature, must, by so doing, lessen very greatly the chances of the heart complications. We would go so far as to say that no case of acute rheumatism seen within the first twenty-four hours need have cardiac lesions, if treated by this method. Many object to the salicylate treatment in rheumatism, on the ground that relapses are especially liable to occur.

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[*] "Boston City Hospt. Reports" (new series), 1877.

[†] "Brit. Med. Jour.," Aug. 25, 1877.

[‡] "Lancet," Oct. 13, 1877.

[§] "Boston City Hospt. Reports," first series.

(*To be concluded.*)

ART. II.—*Some Investigations into the Mechanism of Speech.*

By NORMAN W. KINGSLEY, M. D. S., D. D. S.

HAVING been incidentally engaged for many years in observing some peculiar phenomena in articulate speech by persons with defective organs, which were unexplained by any authority to which I had access, I was led into an original investigation of the mechanism of speech with both normal and abnormal organs.

Articulate speech is based upon the physics of sound, a knowledge of the latter being essential to a comprehension of the mechanism of the former. All sounds, whether harmonious or discordant, are caused by the vibrations of matter. Musical sounds and noises are equally the result of vibrations; the first being the result of periodic or regular-recurring vibrations, and the second of those which are irregular, confused, non-periodic. Wherever there is sound there is motion, and conversely, wherever there is motion there might be sound, if there were a medium by which the vibrations were conducted to our ears, and our ears were capable of apprehending the vibrations. As our ears are constituted, they will not appreciate a sound which is the result of less than sixteen vibrations to the second, nor will they take cognizance of sound when the vibrations exceed 40,000 per second.

The vibrations which reach our ears may arise from a multitude of causes. They may originate in the air itself, or in some substance far removed and conveyed by the air to us. No sound emanating from whatever cause and heard by the ear as a single sound, is a simple sound. It is always a compound or composite one, made up of a number of tones of different intensity and pitch, together with a possible admixture of noises, which combined constitute the sound as heard.

The fundamental tone is always associated with tones higher or lower in pitch, or with both, which modify it. The difference in the quality or timbre of the same musical note as emanating from different instruments, such as the violin, clarionet, and organ, is due to the different admixture of overtones and undertones with the fundamental note.

One of the most interesting phenomena of the physics of sound is its augmentation or reinforcement by secondary causes. A hollow body, as a short tube, for example, closed at one end, containing a column of air of a certain length, can be made to resound by bringing its open end near a sounding body.

The sound emitted throws the column of air within the tube into motion, and these vibrations, being identical with those of the sounding body, augment or reinforce the original note. If the column of air in such a resonating tube is not in unison with any tone of the combination or clang, no response will be heard; but if in unison with any tone of the clang, such tone will be augmented or reinforced. Thus a resonating body may augment the fundamental tone—or by unison with one of the overtones or the undertones, will reinforce that to the exclusion of all others. A hollow body or resonating cavity depends for its power upon its form and dimensions rather than upon the substance of its walls. The recognition of this phenomenon is the key to the mechanism of speech.

The human voice is caused by the action of the expiratory muscles driving the breath outward through the larynx. The sound produced by vibrations of the vocal chords is not a simple sound, but a clang. The buccal cavity and the nasal cavity become resonators; the palate, tongue, jaws, cheeks, lips, and nostrils being capable of altering and modifying the form and dimensions of these cavities to a very great extent; but whatever shape they assume they will have, like all other hollow bodies filled with air, their own tone-character in each different form and dimension. Consequently, as the sound passes out through the mouth some one tone of the clang which is in unison with the tone-character of the buccal cavity at that moment will be augmented and intensified. This reinforcement by resonance changes the quality or timbre of the laryngeal clang.

"In this changed timbre consists the nature of vowel sounds. A vowel is the timbre which results from the increase by resonance of one or more tones in the laryngeal clang." * *Pure vowel sounds can be made only by resonance of the buccal cavity alone and in its normal integrity.*

Let any other cavity communicate with it and its tone-character is destroyed, and *par consequence* the purity of its vowel sounds; make a communication with the nasal cavity, either great or small, and pure vowel sounds are impossible. The power to change the shape and size of the oral cavity being great, equally great is its power to change the laryngeal clang. This change of timbre in the clang may be continuous and uninterrupted within the compass of the voice, from the lowest tones to the highest; and what are called the different vowel sounds are but points along this vocal stream which our ears distinctly mark and separate one from another.

Articulate language may adopt as many divisions of this vocal stream as the ear can distinguish, but practically it is not desirable to burden a language with *extremely nice shades of sound.*

Max Müller says: "Vowels in all their varieties are really infinite in number." As a precise statement this can not be correct, and as an approximate statement it is only theoretically true.

The human voice is heard only within certain limits, and practically there can be no more vowels than appreciable changes of timbre and pitch within those limits.

The five most distinctly marked vowel sounds used in the English language are OO, O, AH, A, E.† These five vowels are not to be confounded with the five vowel letters of the English alphabet, a, e, i, o, u. The English names of these letters do not express the distinction between the principal vowels as well as the Italian pronunciation of the same letters. OO is the original Anglo-Saxon name for U. In English the sounds AH and A, which are distinctly separated in the laryngeal clang, are expressed by one letter, in Italian the same sounds are expressed by A and E.

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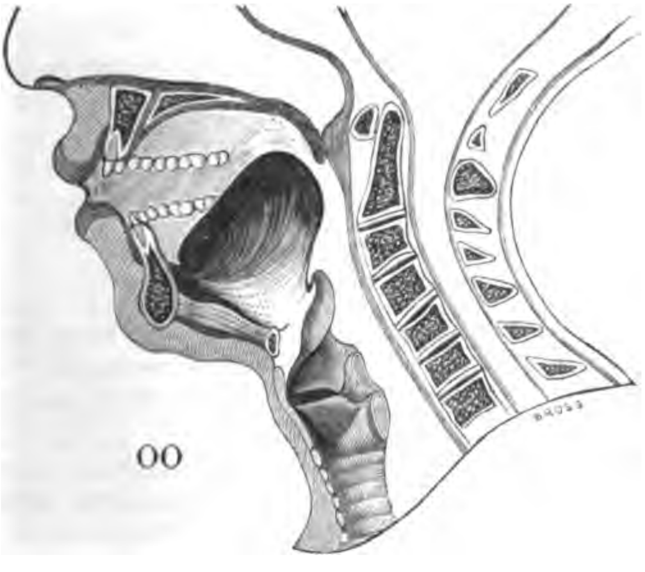
* Professor Elsberg.

† Dr. Bristowe, in a recent lecture before the Royal College of Surgeons, England, makes *thirteen* vowel sounds in the English language, which he illustrates by the fundamental vowel in each of the following syllables or words: *past*, *pat*, *pet*, *pate*, *pit*, *peat*, *pauper*, *pot*, *potent*, *put*, *boot*, *pur*, *putty*. But even this illustration will not suffice to convey a clear apprehension of his designations. The words which he has chosen are not pronounced uniformly wherever English is spoken. Cultivated scholars use a different vowel in some of them from what the lecturer evidently intended.—("London Lancet," April, 1879, p. 507.)

The written vowels in both languages are the same, but the spoken vowels represented by them differ; we are obliged, therefore, to adopt the designations of OO, O, AH, A, E, to express in English the five principal vowels.

These sounds constitute the fundamental vowels of nearly all the languages of the world. In the production of these vowels, according to Tyndall, the laryngeal clang undergoes the following changes: "For the production of U (oo in hoop) I must push my lips forward so as to make the cavity of the mouth as deep as possible, at the same time making the orifice of the mouth small. This arrangement corresponds to the deepest resonance of which the mouth is capable. The fundamental tone of the vocal chords is here reinforced, while the higher tones are thrown in the shade."

FIG. 1.

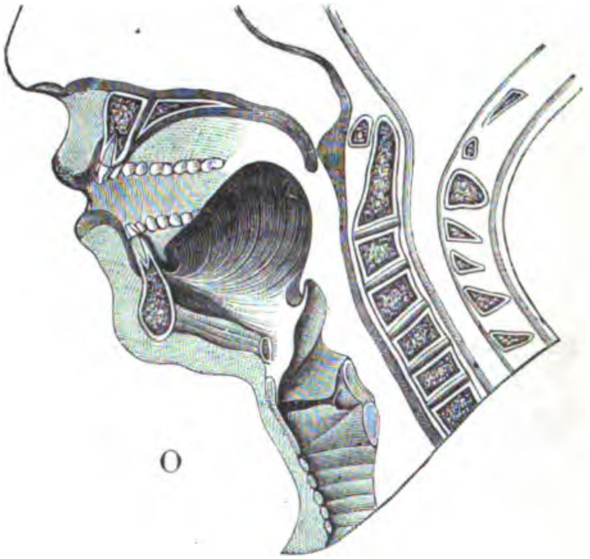


In Fig. 1 is shown the position which the tongue, palate, and lips assume in making OO. The tip of the tongue is much depressed in the floor of the mouth and its back lifted high toward the soft palate, but it does not touch the roof of the mouth at any point; the jaws are opened and the lips contracted, so that the oral cavity becomes bottle-shaped, and the passage through the nares is completely shut off by the conjunction of the palate and pharyngeal wall.

"The vowel O is pronounced when the mouth is so far opened that the fundamental tone is accompanied by its strong, higher octave."

In Fig. 2 the organs are represented; the lips are not so close, and the tongue is not so much retracted at the tip nor lifted so high at the back as in the former illustration.

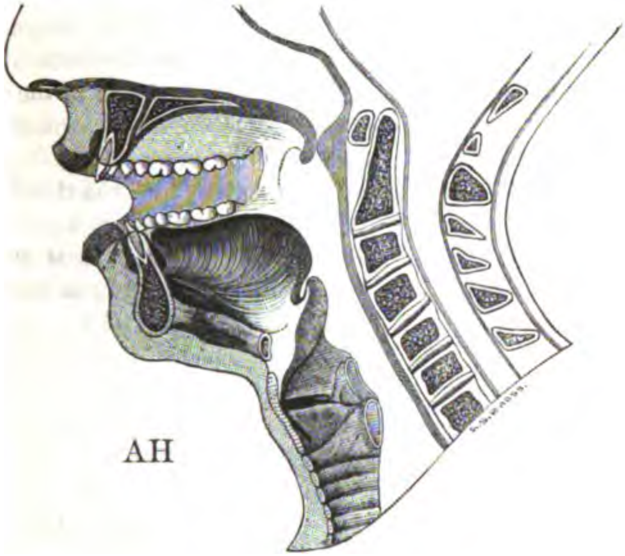
FIG. 2.



"In the production of the sound AH, the higher overtones come principally into play.

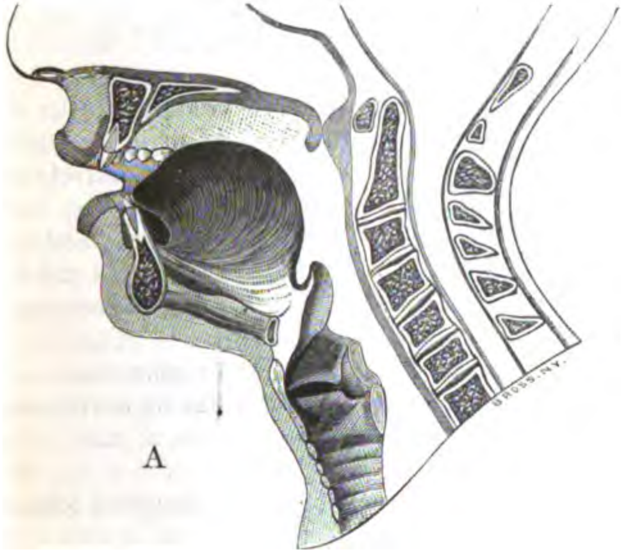
"The second tone may be entirely neglected; the third rendered feebly; the higher tones, particularly the fifth and seventh, being added strongly."

FIG. 3.



In Fig. 3, illustrating the organs during this sound, we see the oral cavity distended to its greatest capacity; the mouth

FIG. 4.



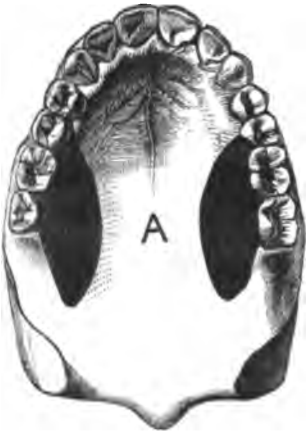
is wide open; the tongue lies comparatively flat, and the veil of the palate is lifted to its highest elevation.

To make a resonating cavity which shall produce AH, some persons curl the sides of the tongue upward in the form of a trough, while in others the same cavity is formed with the tongue full along the median line.

"The vowel A derives its character from the third tone, to strengthen which by resonance the orifice of the mouth must be wider, and the volume of air within it smaller than in the production of O. The second tone ought to be added in moderate strength, while weak fourth and fifth tones may also be included with advantage."

In Fig. 4 the marked change from AH is seen in the elevation of the tongue, and a reduction in the dimensions of the vocal tube. We find now, for the first time thus far, the tongue touching the roof of the mouth.

FIG. 5.



This contact is shown in Fig. 5 by the black patches on the alveolar border against the molar teeth.

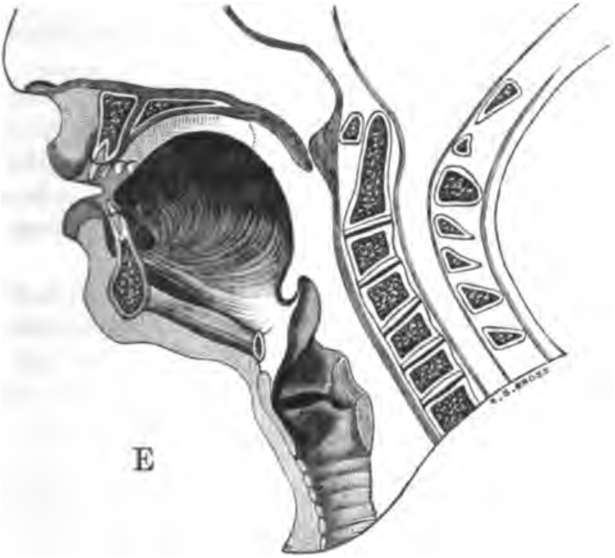
The method by which this was determined is described further on.

"To produce E, the fundamental tone must be weak, the second tone comparatively strong, the third very feeble; but the fourth, which is characteristic of this vowel, must be intense. In order to exalt the higher tones which characterize the vowel sound E, the resonant cavity of the mouth must be small."

In Fig. 6 we see the tongue lifted higher than in making any preceding vowel, and the resonant cavity, in both form and dimensions, in striking contrast with that of OO.

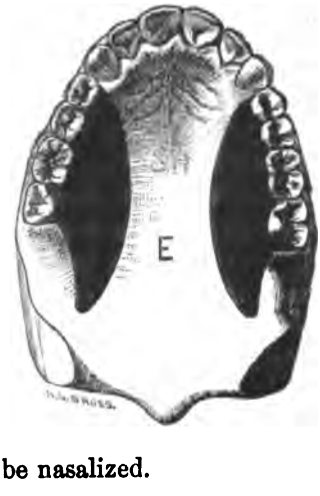
In E, it partakes of the nature of an elongated tube. The reduction of the vocal passage is also seen in Fig. 7, where the contact of the tongue is shown to extend the whole length of the sides of the alveolar border.

FIG. 6.



The foregoing five illustrations cover the entire compass of vowels from the highest to the lowest; all the others heard by Bristowe, and more even as claimed by some find their relative position somewhere between the extremes of E and U (OO).

FIG. 7.



It will be observed that in each of the sectional illustrations the soft palate is elevated, the pharyngeal wall bulges forward, and the uvula lies in firm contact against it. This shutting off the nasal cavity is essential to the purity of vowel sounds. If there be any escape of breath or sound, however small, behind the curtain of the palate, the vowels will be nasalized.

This is the explanation of the peculiar vowels of the French language. In addition to those used in English, there are several which are characterized by resonance of the nasal cavity, showing that, at the time of their formation, the palate and pharyngeal wall are relaxed. These nasal vowels are essential to the perfection of the French language, but when introduced into English destroy its purity.

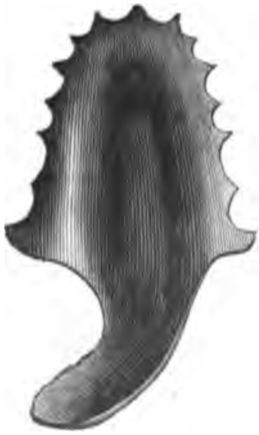
This is a loose habit of speech among some English-speaking people into which large communities have fallen. By a slack conjunction of the posterior border of the palate and the pharyngeal wall the whole speech is affected disagreeably.

The illustrations here used are the result of personal studies of the organs in action in many cases, and are the record of one mouth in particular with well-developed organs. The means adopted were as follows:

I made a cast of the roof of a mouth extending back and down to the boundary of the fauces, and upon this cast fitted a very thin and delicate plate of black vulcanite, covering the entire roof within the teeth and the palate.

Two or three such plates were made, duplicates of each other in the roof of the mouth, but varying in the palatine portion. One of these plates is shown in Fig. 8. In this one, the sides of the posterior or palatine portion have been cut away, leaving a tongue extending down to the uvula; one of the others covered the whole palate, and in another the whole palatine portion was cut away.

FIG. 8.



When used to test articulation, one of them was painted with a film of chalk, wet up with alcohol so that it would dry quickly, and then introduced into the mouth, and the sound to be experimented upon made clearly and distinctly as possible, and the plate removed. If the tongue touched the roof of the mouth, the teeth, or the palate in any part, the white surface of the chalk was removed, exposing with the utmost distinctness the black surface in contact. The form of the contact in a given sound was delineated upon a clean plaster cast of the roof of the mouth, and the experiment continued with the same or some other sound. Those plaster casts were copied in the foregoing and following illustrations.

These experiments were repeated over and over again with the same sounds at different times and on different days, until uniformity was proven and the various plaster casts became a record of the exact position of the tongue in making these sounds.

The separations of the jaws and lips were determined accurately by measurement, the varying positions of other organs by repeated observation and other tests, and all drawn to a uniform scale and here reduced. They are therefore consistent with each other. But it must be borne in mind that, even if it were possible to obtain absolutely accurate models of the organs of speech while in action, of any number of cases, it is not probable that any two of them would be exactly alike.

It is not supposable that all persons in making the same sound place the active accessory organs—the tongue, palate, etc.—in the same identical position. Variations to a greater or less extent can be observed in every one. Exactly the same resonating cavity in *shape* is not likely to exist in any two jaws. With the fixed portion of any buccal cavity differing somewhat in form from every other, the changeable portions, such as the tongue and palate, adapt themselves to the circumstances and produce a resonating cavity of the same tone-character. The variations in the position of the articulating organs as seen in different persons in producing the same sound are then understood. So long as the integrity of the accessory organs is preserved a resonating cavity of like tone-character can be formed.

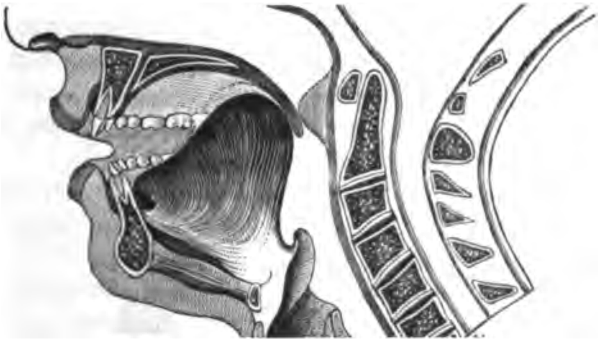
The scope of this paper will not permit an analysis or explanation of the mechanism of all the sounds that combine to form articulate language. As it is intended solely for the English reader, no attempt will be made to describe such sounds as may form an important element of other languages, but which are not heard in any word in English. To a reader who is unfamiliar with a foreign language it is very difficult to convey other than by vocal demonstration, an apprehension of those sounds which are peculiar to that language. Nor shall we undertake an investigation into certain nice distinctions of pitch, timbre, and tone, which would lead us away from our main object. We shall rather confine ourselves to the distinct sounds of the English language appreciable to nearly all ears, and represented by characters or letters. The difference between these is so well marked and the mechanism of their formation so positive that we can discover it, describe it, and illustrate it.

Articulate speech is made up of vowel and other sounds—pure, interrupted, or checked. The English language, like all other languages, is divided into vowels and so-called consonants. Authorities disagree as to the exact number of vowels for the reasons before given, and they also disagree as to the number of consonants. One reason of the disagreement is that some class all the sounds other than vowel as consonantal; others subdivide these, reducing the number of real consonants, and the disagreement is still further increased by the divisions not being always the same.

Again, there would be a difference as to the whole number of sounds to be called by any name. Accepting for the present the term *consonant* as including all sounds other than vowel, we find them classified as labial, dental, palatal, and nasal, each term bearing some relation to the locality in which the formative action takes place. There are various other divisions and subdivisions of consonants, making distinctions of great interest to the physiologist and phonologist, but which are also beyond the scope of our present purpose.

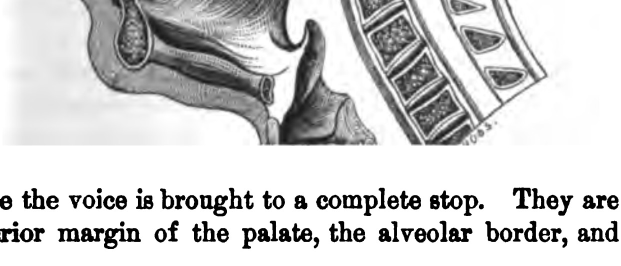
These interruptions to the phonetic stream are of equal importance to articulate speech with the vowel sounds, as the stoppage of a sound may become as distinctly associated with an idea and express it as the sound itself. This oral current, which by modifications, interruptions, and stops forms the consonants, is not a vocal stream like that of the vowels, but it is a breath current driven from the lungs in the same manner, sometimes accompanied by vocal vibrations and sometimes not; nearly one half of the consonants are formed without voice, and are simply breath currents of greater or less force, modified by resonance or interrupted by the accessory organs. Every breath consonant in the English language has its associated vocal fellow, i. e., in every instance in which a breath sound becomes an element in our language there is another element added by vocalizing a like breath current.

FIG. 9.



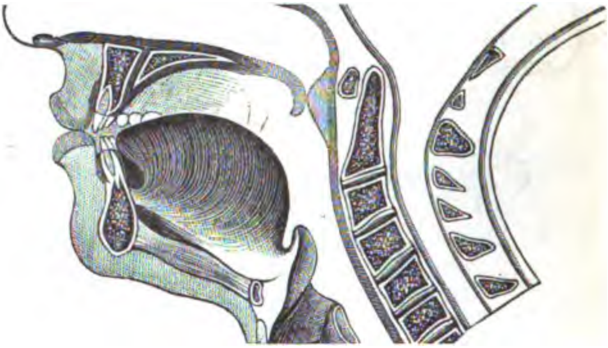
There are three definite points along the vocal pathway where the voice is brought to a complete stop. They are the posterior margin of the palate, the alveolar border, and the

FIG. 10.



lips. Figs. 9, 10, and 11 illustrate these positions. In Fig. 9 the root of the tongue is brought into firm contact with the palate. In Fig. 10 the tip of the tongue is in contact with the alveolar border immediately behind the front teeth, and in Fig. 11 the contact is by closing the lips.

FIG. 11.



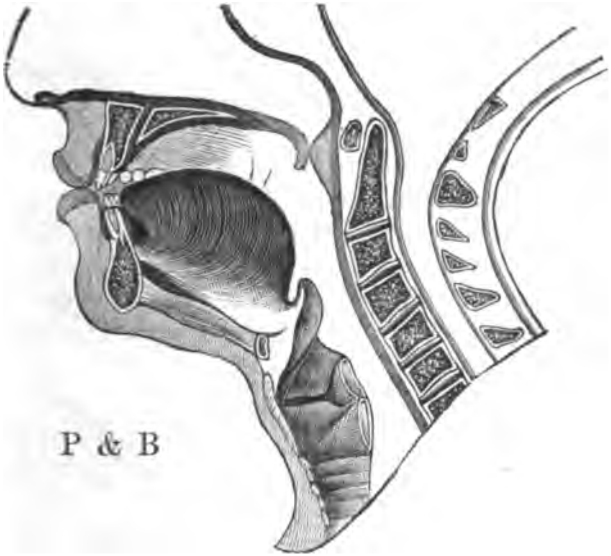
There is no better way of making a description of the consonants appreciated than by beginning with the simplest articulate sound of childhood.

The first title applied to a parent is the easiest and most natural for infancy to pronounce.

Papa is simply the sound of P joined to the vowel AH. The vowel sound has been described; and to produce the sound of P, we have only to stop the sound of AH by closing the lips.

In making the sound of AH (see Fig. 3) all the principal as well as the accessory organs are in their most easy, natural, and unrestrained position. The sound of AH is but the natural voice of the child flowing out of the mouth, when it is stopped by closing the lips and suddenly opening them to allow the force of breath current to expend itself, and the sound of P is the result. It makes no difference whether the movement of the lips follows or precedes the emission of sound; the P lies in the act of closing and opening the lips joined to a vowel sound. Repeat this shutting of the lips upon the sound of AH with sufficient rapidity, and we have *Papa*, the simplest and easiest word in the English language that a child can utter. (See Fig. 12.)

FIG. 12.



P is not simply a check or stoppage of a vowel; it must have an associated breath current for its completion. If it follows or checks the flow of a vowel, the lips must be opened to permit the escape of a little puff of breath, or the P is not complete.

When P begins a syllable this puff passes instantly and undistinguished into the vowel which follows.

P is a breath consonant and its associate vocal fellow is B.

Its formation is identical with that of P until the lips are closed, but after the closure the sound is not stopped, but continued in the buccal cavity, which is the distinctive characteristic of B.

It is not important that the sound be prolonged after the closure of the lips, but it is essential that it be momentarily heard in the confined buccal cavity.

As an experiment the sound can be prolonged, but only until the buccal cavity becomes filled with air, when it ceases.

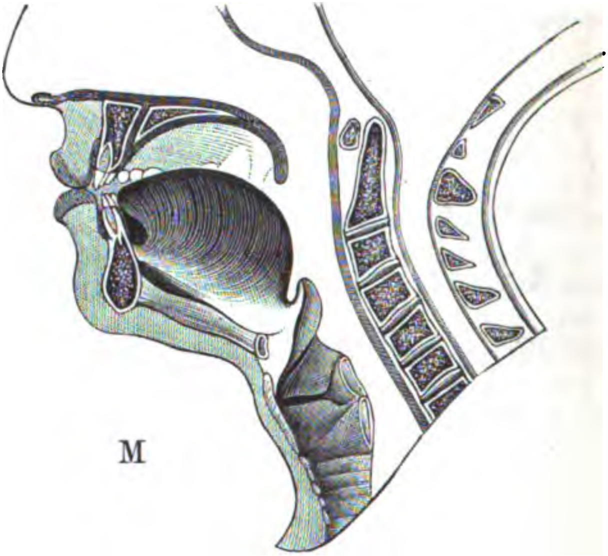
Like P, it matters not whether it precede or follow the vowel with which it is connected; its value is the same. B is a vocal consonant.

In the formation of both P and B (see Fig. 12) the palate and pharyngeal wall are in contact.

Escape by way of the nostrils must be impossible, or the characteristic sound of B made by filling up the buccal cavity is lost.

Let the palate drop at the time of making B, and permit the sound to pass out at the nostrils, and M is the result. M is a vocal-nasal consonant, and its formation is identical with P and B in the closure of the lips, either preceding or following a vowel. Physiologically the difference between B and M lies solely in the position of the palate (see Fig. 13). We thus see that P is the result of the complete stoppage of a vocal stream by the lips; B is a stoppage by the lips, but the sound continued in the buccal cavity; M, the same stoppage of a vocal stream by the lips, but the sound directed through the nasal passages where it may be prolonged indefinitely.

FIG. 13.



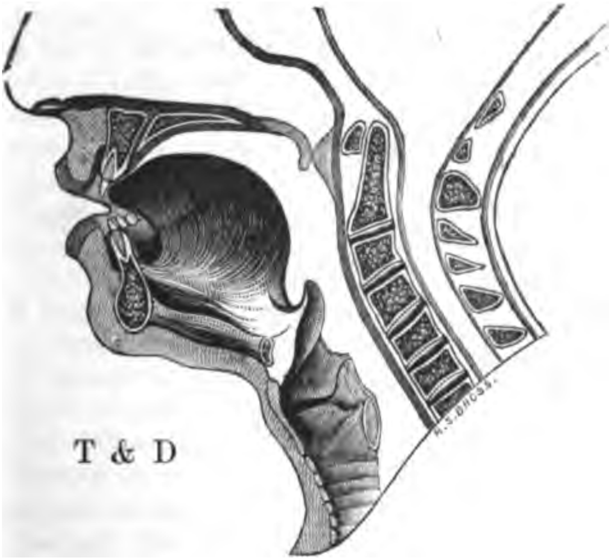
Any one interested in this subject can verify these experiments upon himself; indeed it is almost a daily occurrence that we meet some acquaintance whose Ms are all turned into Bs, by a stoppage of the nasal passages from cold or otherwise.

These sounds are called labial because the lips are principally concerned in their formation; the tongue does not necessarily come in contact with the roof of the mouth in their enunciation.

The mechanism of their production is confined to the lips and palate, and any contact of the tongue with the roof at the time is only incidental and dependent upon the vowel sound with which either of these consonants is joined. Thus in PAH or MAH there is no contact; but in PE and ME, the tongue will touch the roof at the sides, as seen in Fig. 7.

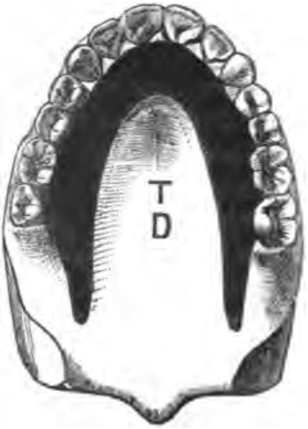
In considering the second class of consonant sounds termed *dental*, we may use another illustration from the child's vocabulary—TA-TA. This syllable is as simple as papa, and its only difference is that in papa the lips stop the emission of

FIG. 14.



sound, while in TA-TA the vocal sound or vowel AH is stopped by placing the end of the tongue upon the gum immediately behind the front teeth, as shown in Fig. 14 and Fig. 15. The only physiological difference between P and T is that the current is stopped by the lips in the first, and by the tongue in the second. In all other respects they are equal.

FIG. 15.



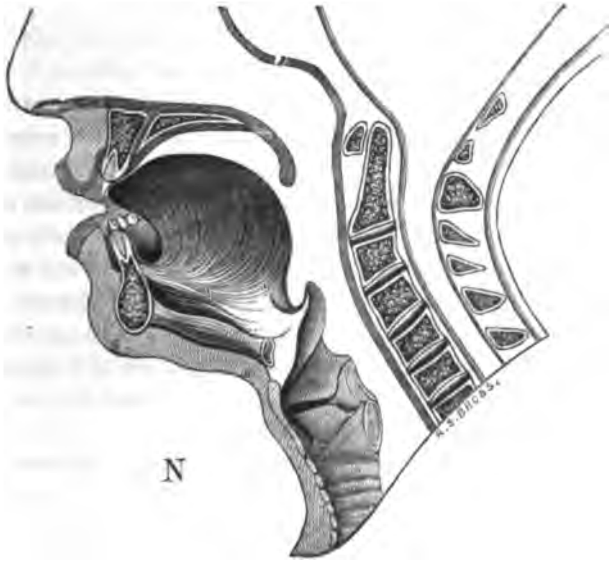
Make the vowel AH and interrupt it rapidly as described, and we have the continued sound of TA-TA. In Fig. 15 we see that the conjunction of the tongue with the gum is not only in front at its tip, but extends the whole length of the alveolar border or dental arch. To make the sound of T, it must be in contact for this entire distance.

If the vowel sound were made with the tongue in contact only at the tip, and the sound escaping at the sides, L would be produced instead. It is this entire contact and escape only at the tip which gives the peculiar sound of T. This sound will be more readily apprehended, perhaps, by placing it after the vowel, as in *at*. T we call a breath consonant, the same as P, because the voice is not concerned in the formation of either. As we found B was the vocal associate of P, so do we find the vocal fellow of T to be D, and bearing the same relation. B was the filling up of the oral cavity with voice while the lips were closed either at the beginning or ending of a syllable; so is D formed by filling up the contracted oral cavity with voice, while the tongue is in contact with the roof of the mouth, as seen in Figs. 14 and 15.

We see here, also, the palate and pharyngeal wall are in contact, preventing all escape by way of the nose, and the sound of D may be continued until it fills the oral cavity, when it must cease by limitation of space.

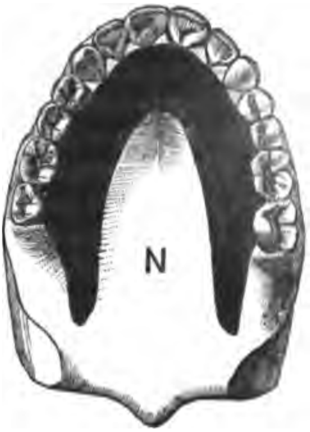
But if now the palate be relaxed, so that the sound can escape through the nares, it may be continued so long as the lungs can furnish the power to vibrate the vocal chords, but it is no longer D, but N (see Fig. 16).

Fig. 16.



The relaxation of the palate and pharyngeal wall change D into N, and, conversely, any enforced stoppage of the nasal outlet turns N into D. In my experiments I found that the surface of tongue contact with the roof was greater in N than in T or D (see Fig. 17); but I attribute this to the fact that N can be more easily prolonged than either of the others, and the contact is likely to become more general. This is probably more accidental than essential.

Fig. 17.



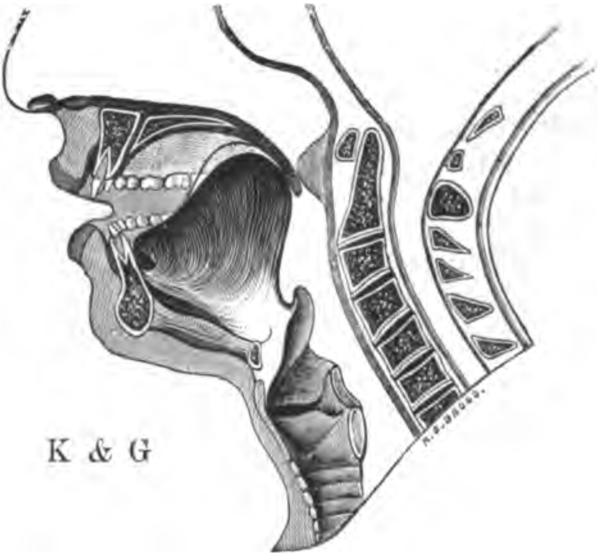
The third distinctly marked point at which the vocal current is interrupted is the posterior part of the oral cavity, and, like the other two, its function is the making of three sounds—a breath, a vocal, and a nasal sound. Thus, when the extreme back of the tongue is brought into contact with the soft palate in front of and above the uvula, closing the passage to the mouth, and at the same moment the upper part of the pharynx is advanced to meet the palate behind, and stop egress by the nares, the organs are in position to make K or G.

In the *cul de sac* thus formed above the larynx, the breath or voice accumulates. If breath only, the sudden relaxation of the tongue produces an explosion which is the sound of K. If the cavity be filled with voice until the relaxation comes, the sound will be G. These sounds are so intimately related that it is often difficult to distinguish between Ko and Go, when spoken by persons of loose habits of enunciation.

The essential requisite of G is that the sound be heard in the throat prior to its union with a vowel, or if it follows a vowel, as in *hog*, it must be made in the same way as above described.

In Fig. 18 is illustrated the position above described. In my own case, I found that the tongue contact with the soft palate was greater in making G than in K, and this is indi-

FIG. 18.



cated in the illustration by a line showing the tongue at a higher elevation.

FIG. 19.

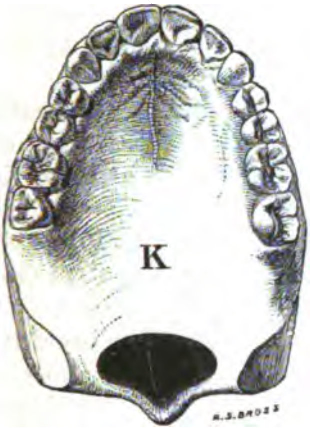
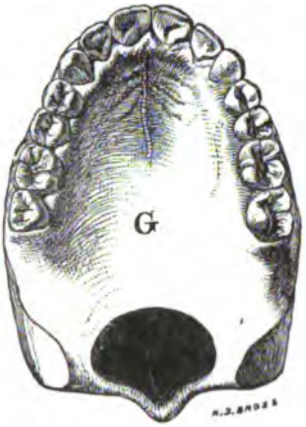
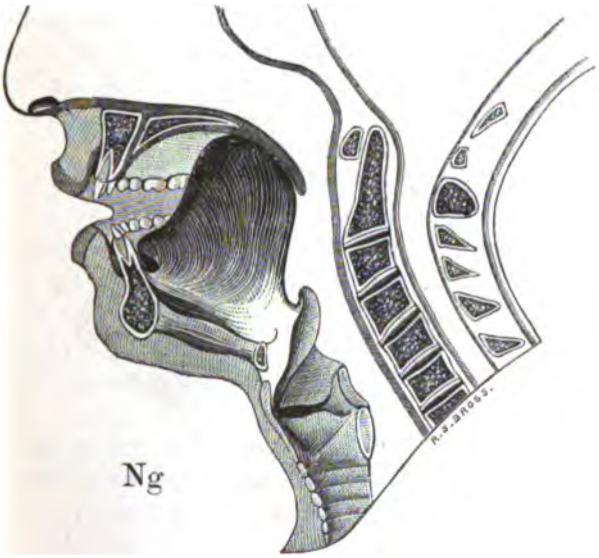


FIG. 20.



The difference is also seen in two other views, Figs. 19 and 20. Nevertheless, there is no physiological difference between them. A perfect G can be made with the limited contact of K.

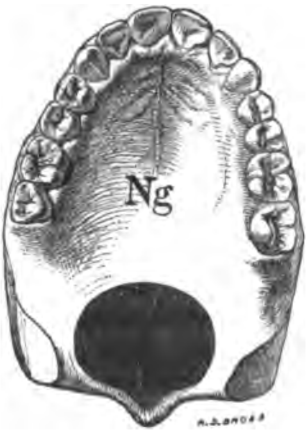
FIG. 21.



The nasal sound of this group is NG, and is the result of the relaxation of the pharyngeal wall, while the tongue and palate are in continued contact. The sound which would otherwise be G is thus nasalized, and becomes a distinct elementary sound, for which our alphabet furnishes no character, and the only method of expressing it is by the combination of N and G, this being the sound given when those two letters are combined. The surface contact is also greater, as shown in Figs. 21 and 22, but this greater contact is not essential; it is only incidental.

There is another class of sounds which form an important part of articulate language of a different character from those we have been considering, and which are made principally in the front part of the mouth. Instead of being interruptions or checks to vowel sounds, they are continuous, and may be prolonged indefinitely. They are the result of a current of air driven through a small aperture, and are vocal or not, according to the sound desired.

FIG. 22.



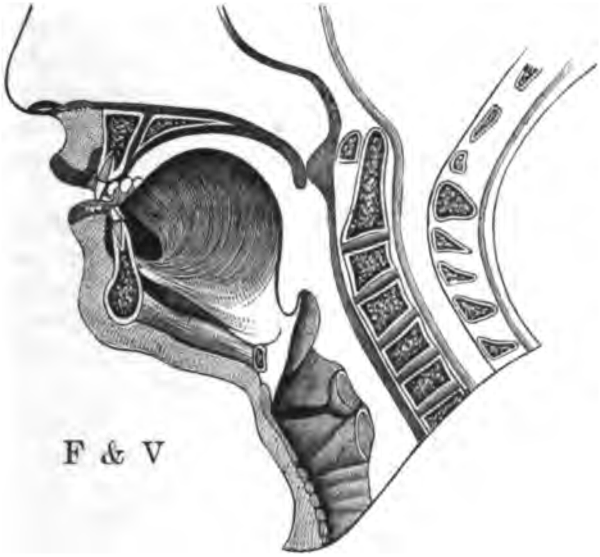
For example: place the edge of the lower lip against the edge of the upper front teeth, and drive a current of air through between the teeth, or through a narrow aperture between the edge of the teeth and the lip, and F is the result.

The termination of a vowel sound by a breath sound in this manner forms a syllable with F, or the reverse; beginning a vocal sound by a breath sound in this manner produces the same result.

We can change F into V by vocalizing the breath. The two are formed exactly alike; the current of air past the teeth being with voice in one, and without in the other.

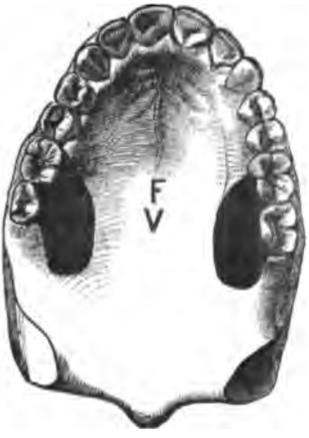
In Figs. 23 and 24 are seen the positions of the various organs during their production, the contact of the tongue with the roof of the mouth being limited to a small space on the alveolar border, near the back teeth. Another pair of the same character is S and Z. S is one of the most important

FIG. 23.



sounds of the English language, and a defect in its enunciation is more noticeable often than any other sound. It is simply a current of air driven through a narrow chink, producing a hissing sound, the counterpart of which is frequently heard arising from a variety of causes outside of human speech.

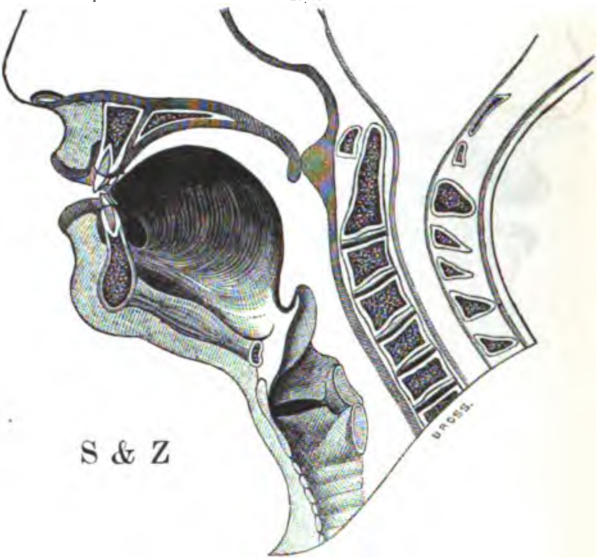
FIG. 24.



Place the tongue against the upper gum in the same way and position as when T is formed, but relaxing the end or tip and making a narrow passage for escape, as in Figs. 25 and 26.

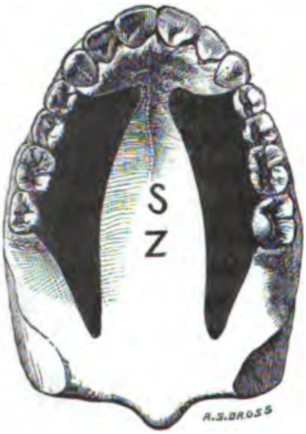
The sound of S is formed by a current of air driven through this chink. Its corresponding fellow, Z, is a vocal sound, and is made with the tongue and other organs in exactly the same position; but the breath current is vocalized in one, and unvocalized in the other.

FIG. 25.



A third pair of like character is SH and ZH—SH as found in *hush*, ZH as found in *azure*. These are not combinations of other sounds, as of S and H, but distinct elementary sounds for which our alphabet has no separate characters, SH being breath and ZH vocal.

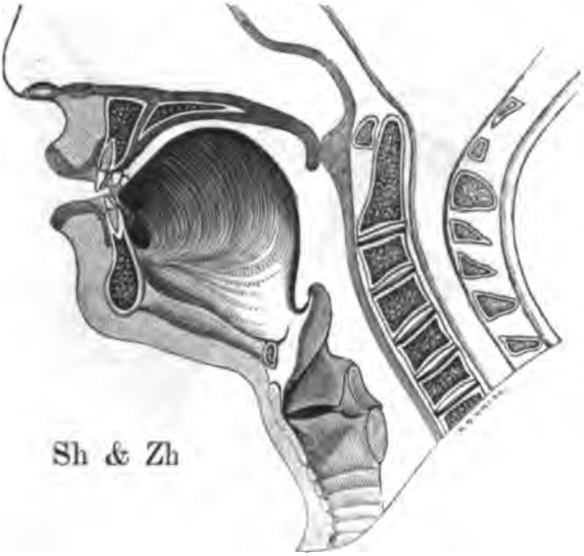
FIG. 26.



The aperture for these sounds is similar to that of S, but wider and higher up in the roof of the mouth, which seems to take away the sharp, hissing sound characteristic of S. (See Fig. 28.) There is considerable latitude in making this sound, and its pitch may be varied considerably without seeming to affect its importance.

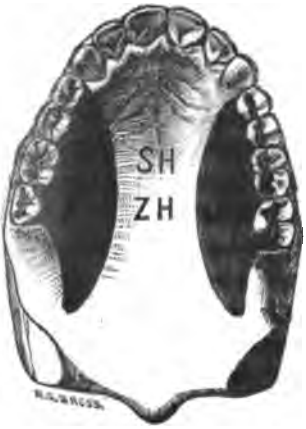
For example, the lips may be held as in P, or they may be considerably protruded. The advanced position seems to be the easier and more natural, but the result for purposes of speech is essentially the same.

Fig. 27.



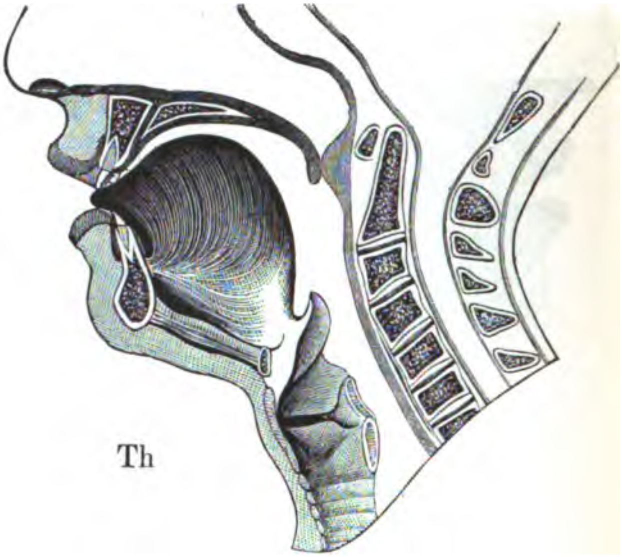
A fourth pair of the same kind is found in the two sounds of Th as heard in *thin* and *thou*, the former being breath and the latter vocal. In its formation, the tongue lies close to the gum against the back teeth, and the aperture in front is broad, similar to that in Sh, but the tongue is more advanced and lies closer to the front teeth and adjacent gum. (See Fig. 29.)

Fig. 28.



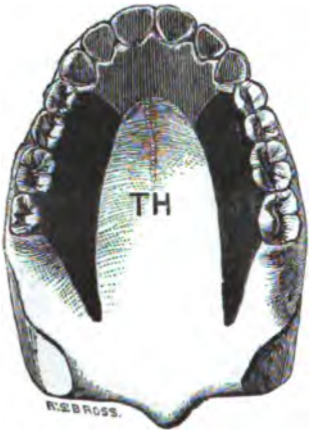
In Fig. 30, the firm contact is shown by the solid black, and the lighter contact by the shaded portion of the cut. There may be some latitude in the position of the tip of the tongue without materially affecting the result. The sound can be produced with the tongue projecting beyond the edges of the upper teeth, or retracted entirely within the dental border.

FIG. 29.



Still another pair of like character is formed with Ch and J; Ch being a breath sound, and J its vocal associate. It is claimed by some that these are not distinct sounds, but combinations of others already described, the former being made up of T Sh, and the latter of D Zh, but I found the tongue contact to be higher up and further back, as shown in Figs. 31 and 32, and therefore give them a separate description.

FIG. 30.



Practically it is of no consequence whether they be distinct sounds or a combination; the mechanism is so nearly the same as to be difficult to decide.

H, which usually remains unclassified, strictly belongs as much to the same group we are considering as F, S, or Sh. It is an aspirate (rough or hard breathing) made in the throat, and can not be specially illustrated. Its natural vocal associate is the vowel AH, and together they form a pair belonging to the class under consideration. In the minds of some, H seems to have been misapprehended in its formation and association with other sounds.

FIG. 31.

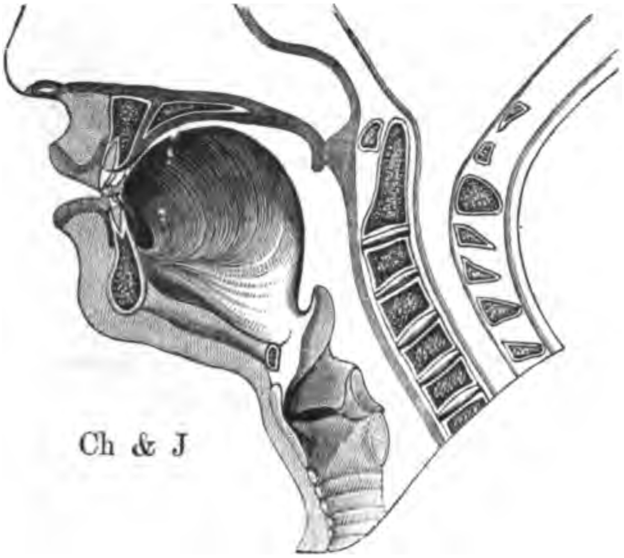
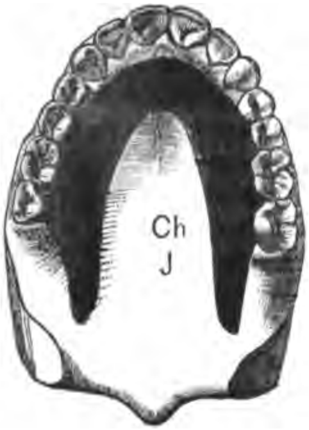


FIG. 32.

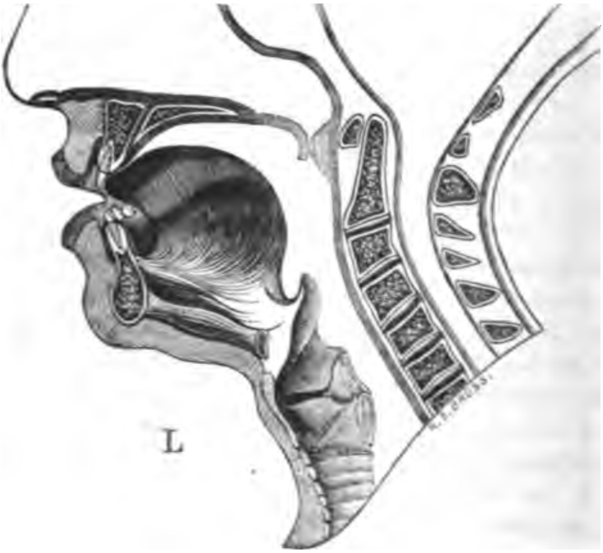


It appears to be the result of forcing the breath sufficient to create an audible current of air prior to the vibration of the vocal chords, and nothing more. Any other value it may have is derived entirely by resonance from the cavity or tube which it traverses. To produce the sound of H, there is not required any change in the position of the vocal organs from that which will admit of quiet breathing. For example, a whistle may be placed between the lips, and all the respiration may pass through it without audible sound; it is only when force is used to create more rapid vibrations of air that the sound is heard. H is the sound of an air current without vocal vibrations, which sound is modified by resonance the same as the vowels.

This explanation of H is the explanation of the formation of whispered speech which by some has been considered mysterious. The only audible sound in whispering is that of a forced current of air; and the formation out of it of syllables and words is by resonance without voice, the resonating changes in the buccal and nasal cavities being identical with those when the vocal chords vibrate. It requires more lung power to produce this audible current of air than it does to produce sound by vibration of the vocal chords when they are under tension, and for this reason whispering is more tiresome than speaking.

A little reflection will show that in whispered speech there can be no double consonants such as we call vocal and breath consonants. Vocal consonants can not exist in true whispered

Fig. 33.

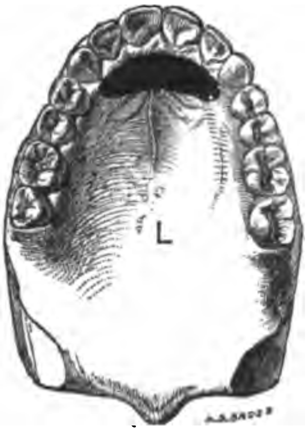


speech; consequently whispered language is deprived of eight elements which enter into articulate speech. Papa and Baba in whisper are the same, so are also Ko and Go, etc.

We have thus described all the so-called consonantal sounds of the English language save two, and arranged them in two classes, the first class consisting of three groups of trios, and the second class of six pairs.

The two exceptions to this classification are L and R, both of which partake as much of the vowel character as the consonantal, and are usually called semi-vowels. L is produced by holding the tip of the tongue in contact with the gum as in T, but relaxing it at the sides, and uttering through this passage the vocal-current.

FIG. 34.



In Fig. 33, this relaxation of the sides is shown by a lighter band across the tongue. In Fig. 34, this contact with the roof of the mouth is seen to be only in front. L also receives some characteristic augmentation from the vibrations of the sides of the tongue as the current passes.

Physiologically the sounds of L and D are so nearly alike that D is confined in the mouth and L escapes at the sides of the tongue, all the other organs being in the same position. Their near relationship is readily observed by the ease with which they are both sounded in words where they come together, as in "handle"; the L then takes the place of a vowel, the two sounds blending without the interposition of a vowel. During its production the palate and pharyngeal wall must be in contact, or the sound will be imperfect. Although not entirely destroyed, it will be nasalized by the escape.

In Fig. 35 is shown the position of the tongue in making the sound of R. The oral cavity at the time of the formation of this sound corresponds with that in the production of the vowel AH. In fact, many people sound R so slightly that it is little if anything more than the vowel AH. But the formation of R requires that the tip of the tongue should be pointed upward and vibrated while the current is passing. With some the tip of the tongue is distinctly felt against the roof of the mouth during these vibrations; while with others it is below, as represented in the illustrations. Neither does it seem requisite that the tongue should be pointed to the same locality in the roof—it may be farther forward or farther back. The sound of R is produced by the rapid interruption of the voice, in the above-described manner, in the middle of the mouth. In some languages this sound is much more marked and distinct than it is generally made in English. With some English-speaking people it is an affectation of refinement to banish it almost entirely.

FIG. 35.

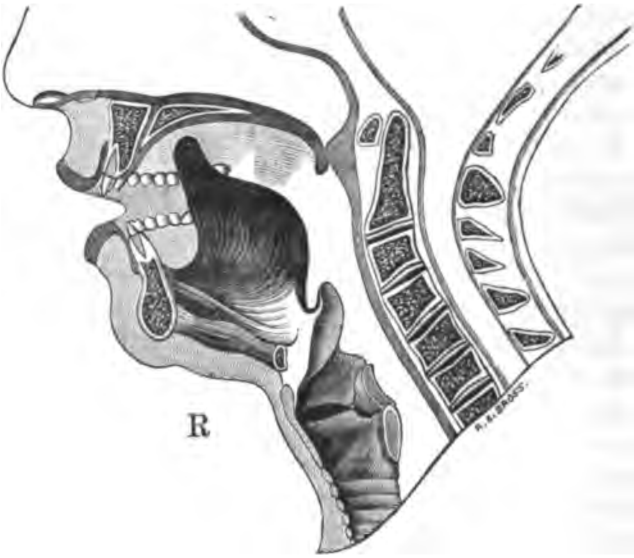
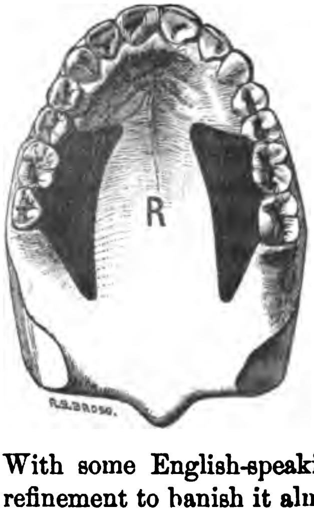


FIG. 36.



The foregoing explanation comprises nearly all the distinct sounds which form the English language. The sounds of the other letters of the alphabet not here named are either repetitions or combinations of those described, or are not so distinctive in their mechanism as to be illustrated by diagrams. For example, C is a repetition of K, or S, as it is used either hard or soft. G soft is the same as J, and W is so nearly the vowel "OO"* that a diagram can not illustrate any appreciable variation. X is a combination of K and S, etc., etc.

The foregoing descriptions and diagrams are not advanced as the only method by which the different sounds they illustrate can be produced. They are nevertheless believed to be the arrangements of the various organs which are universally found to be the easiest, and most in conformity with physiological function. As a scientific experiment many of the sounds can be perfectly produced or closely imitated in some other way. For example, S can be made with the tip of the tongue curled backward in the roof of the mouth, T may be made with the tongue placed at various points, etc., and even musical instruments and machines can be made to produce vowels, and to a limited degree consonants.

Children do not place their organs for articulation as the result of scientific teaching, but as the result (not the cause) of the effort to imitate the sound, and as the action of the organs acquired in that way is almost universally identical, it proves the one to be normal and the variations abnormal. I have adopted the usual divisions and designations of vowels, consonants, and semi-vowels, but it is a classification that will hardly satisfy any one who becomes familiar with the subject.

Of the so-called consonants, nearly one half are not *consonant*—i. e., *with sound* (vocal sound) or *sounding with*; P, B, T, D, K, and G are called *mutes*; but B, D, and G are certainly not mute, nor are P, T, or K any more mute than F, Th, or others.

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* Bristowe says: "The sound of the English vocal *W* differs from the vocal *OO* mainly in the fact that the fundamental vowel sound is produced in the larynx, and receives its coloring from the oral cavity; while the distinctive sound of the consonant, though also colored by the resonance of the oral cavity, is manufactured at the labial orifice."

The following table shows a classification more in accordance with their mechanism. This table, proceeding from right to left, may represent the oral tube or cavity from the vocal chords to the lips inclusive, and the sections indicate the points along the line where the sounds are made or checked:

	Contact of both Lips.	Teeth and Lip.	Tongue and Teeth.	Tongue and Gum.	Tongue and Gum.	Tongue and Gum.	Tongue and Roof.	Tongue and Palate.	Throat.
Breath..................	P	F	Th	T	S	Sh	Ch	K	H
Vocal..................	B	V	Ŧh	D	Z	Zh	J	G	Ah
Nasal..................	M			N				Ng	
				First position.	Second position.	Third position.			

The foregoing explanation of the mechanism of vocal articulation supposes the normal integrity of all the organs concerned, each fulfilling its natural function. In the production of all the vowel sounds of the English language the veil of the soft palate is elevated and hugs the posterior wall of the pharynx. This is essential to the formation of resonating cavities of uniform tone-character. Consequently, if the palate be destroyed or congenitally absent, a new resonating cavity is exposed, and the tone-character of the buccal cavity is changed. These sounds can no longer be made in the same way, and in many cases can not be made in their purity at all.

In some other languages, the French, for example, nasalized vowels and other nasal sounds form an important part of the speech, but when such sounds are introduced into the English they destroy its purity.

A dissertation on the mechanism of speech would be left incomplete if it were confined to articulation with normal organs alone. It is a remarkable provision of nature that in many cases destruction of an organ does not involve a destruction of the function performed by it, and this is notably the case with vocal articulation. The teeth may be suddenly destroyed, and at first the effect seems disastrous, but very shortly the lips and tongue accommodate themselves to the change, and the function of the teeth in articulation is nearly or quite regained. The palate, which performs such an important office, may be destroyed, and its loss compensated for in a great measure by an increased activity of the pharyngeal muscles and a new use of the muscles of the nostrils. The phenomena in abnormal articulation are often truly remarkable. In my practice of treating congenital and accidental lesions of the hard and soft palate, I have seen nearly every conceivable variety of deformity and have observed the phenomena. In congenital cases the absence of the palate is often compensated by an extraordinary use of other organs in a manner that would seem impossible. The inability on the part of some to make this compensation gives greater variety to the phenomena, so much so that it is quite impossible to declare by an observation of a defective palate without the aid of the ear what its effect is upon the individual's speech. Neither the size nor the extent of the deformity will determine the effect upon articulation because of this compensation by other organs. A few examples from practice will illustrate these points:

A lady, about thirty years of age, belonging to the higher grades of society, of intelligence and education suited to her station, came to me for treatment. The fissure of the palate was confined to the velum, the apex of the cleft reaching only to the edge of the hard palate. I wrote upon a slip of paper the following syllables: GO, KO, SO, HO, JO, DO, CHO, NO, TO, and repeated them on the slip several times promiscuously, and handed it to her to pronounce aloud as distinctly as possible. Of the whole list, HO, JO, and NO were the only ones that could with certainty be distinguished. All the rest were alike pronounced NO. No difference whatever appeared between her GO, KO, and SO. Theoretically, the S and CH were in her power to make perfectly, and D and J approximately, and K and G the only ones theoretically impossible. No amount of training from infancy had served to develop these sounds, which came to her only after the introduction of an apparatus.

In another case of an Irish girl in the lower walks of life, nineteen years of age, with a fissure exactly similar to the foregoing, the same experiment was tried, with additional syllables of a more complicated character—such as ist, idst, ox, etc. This experiment was tried before the introduction of any instrument, in the presence of a number of surgeons, who were only governed by their hearing in determining her pronunciation. Every syllable was so distinct that it was not mistaken by any one. In this exercise the listeners were not aided by any knowledge of the syllable before it was spoken by the patient. The only criticism was the nasalization which, when she came to read or in conversation, made her speech disagreeable. Theoretically, her K and G should have been entirely wanting, but they were so clear that she was not mistaken in a single instance.

A third case was as follows:

A father brought his son to me—a young man of mature years, who had fissure of the soft palate only. I was not favorably impressed with the intellectual development of the young man. He seemed stupid, and had but little realization of his own condition. His speech was very bad—much worse than most cases where the fissure is no larger than his. His reading was a monotonous, half-idiotic sound, with but little distinction of vowels, consonants, syllables, or words. After two or three interviews I came to the conclusion that it would be hopeless to expect any improvement from him in the use of an artificial palate, and I frankly told the father that I could not encourage the undertaking. Upon being urged for reasons, I stated them as delicately as possible, as being based on what seemed to me to be defective mental power. But such an intimation was not to be listened to by the fond parent, who saw no reason why "his boy" should not have an artificial palate as well as any one else, as he was ready to pay for it.

After a complete understanding by them of what would be necessary for him to do for himself after my work was done, I made and adjusted the appliance. Within the same hour after its introduction, I sat him before me and directed him to imitate exactly every motion of my lips and every sound of my voice. After a half hour's training he enunciated every sound of the English language with all the distinctness and precision of one with well-formed organs.

This he would do under my dictation, executing my will almost as if he had no will of his own—not only sounds, but words and sentences were repeated with clearness and distinctness, and I began to repent the discouragement I had given them. But passing from my dictation he dropped into his former habit of monotonous indistinctness, and I became less hopeful of ultimate results.

Another case was that of a young lady, sixteen years of age, unusually bright and intelligent, with fine musical and artistic taste. The fissure extended through both hard and soft palates to the base of alveolar ridge. Externally there was a hare-lip, which had been operated upon in infancy. With this patient K, G, and S were impossible. By no effort could she make any sound approximating to K or G, and her effort to make S was a gurgle in the throat. CH was unattainable, as well as such combinations as ist, dst, ks, etc. So sensitive was she to the defect that she kept herself from society, and was growing morbid under her affliction. Realizing her utter inability to pronounce some words, she finally formed the habit of avoiding the use of such words in her conversation, and either used synonyms or expressed the idea by a differently constructed sentence.

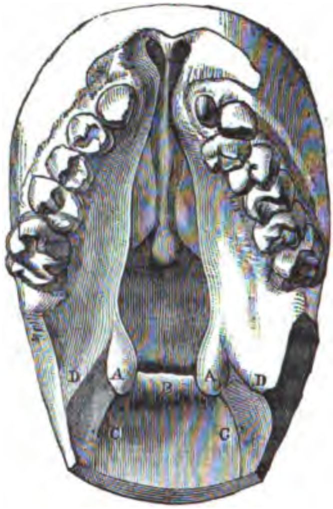
I constructed an apparatus for her, and three years afterward she read before the same company of surgeons before referred to.

She had conquered every sound singly and in its more complex combinations except S, and this was still made in the throat. It was nevertheless made distinctly, and could not be mistaken for any other sound, but it was made improperly, and was wanting in the sharpness which characterizes S.

K and G were perfect, and the former nasalization of the vowels had passed away.

An entirely different manifestation from any of the preceding was that of a man thirty-five years of age, who had double fissure of the palate complicated with double hare-lip. The lip had been very skillfully operated upon in early life. He had grown a heavy beard and mustache, and as the suture of the lip was on the median line the parting of the mustache was natural and graceful, and there was no external suggestion of any deformity. The intermaxillary bone had been removed, and all the incisor teeth, leaving a wide gap between the two sides of the maxillæ, covered in front by the lip. Fig. 37 represents a model of the mouth referred to. A A shows the bifurcated uvula at the extremity of the remnants of the soft palate, which is here shown as drawn up under the action of *levatores palati*. B is the superior pharyngeal constrictor, drawn forward and in contact with the uvulæ. C C shows the palato-pharyngeal muscles, the borders of the pharynx, and D D the palato-glossus. The vomer and turbinated bones are seen exposed in the anterior part of the nasal cavity.

FIG. 37.



In this case, the sounds of TH, T, D, S, Z, SH, ZH, CH, and J were entirely wanting.

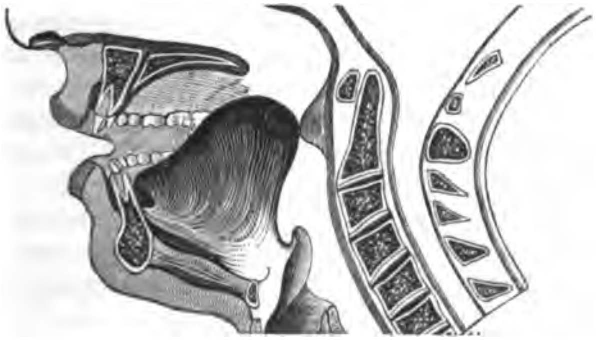
His speech was so bad that in giving him a passage to read before an audience not a word of all he read was understood by his hearers, and yet this man could pronounce the sounds of K and G with the utmost clearness and distinctness, not to be misapprehended or misunderstood.

The phenomenon was a mystery to me until, in my further experiments with him, I discovered that he brought the root of the tongue and the advanced pharyngeal wall into contact.

The absence of so important an organ in normal articulation was here compensated for by a little greater activity of the pharyngeal constrictor and the tongue. This action of the superior constrictor of the pharynx could be very plainly observed by tickling it with a camel's hair pencil when the patient's mouth was open, when it would develop into a strongly marked ridge or cord horizontally across the pharynx.

The formation of a *cul de sac* above the vocal chords, essential to the production of K or G without the interposition of the palate, is shown in Fig. 38. The sounds of T, D, etc., were impossible because the necessary obstruction to the tongue in their formation was wanting, and art must be resorted to, to supply a barrier.

FIG. 38.



Altogether the most extensive deformity of this kind, and the one having the most disastrous influence on the speech that I have ever seen, was a young man upon whom Professor J. L. Little, of the College of Physicians and Surgeons, New York, operated for compound hare-lip, and who afterward came into my hands for an artificial palate.

The patient was nineteen years of age, and up to that period no operation had ever been performed upon the lip. The deformity was horrible. The intermaxillary bone with its integument was suspended from the septum of the nose nearly at its tip, and behind it there was noup per lip whatever. There was no roof to the mouth from front to rear; the gap was the widest I had ever seen. So also was the distance across the jaw from the outside of the molar teeth, and the distance between the canines, the greatest I have ever measured.

Dr. Little was very successful in his operation on the lip, removing the deformity entirely.

Previous to the introduction of an artificial palate, the following described experiment was tried in the presence of a number of distinguished surgeons. I wrote upon a slip of paper the following syllables, which the patient pronounced to the best of his ability, repeating each one several times: BO, SO, TO, HO, MO, FO, KO, PO, GO, DO, ZO, JO, NO, VO, CHO, THO, SHO, RO, HO.

The sound given by him to each of these syllables was written by the gentlemen present as nearly as they could be understood.

A comparison of the various records showed that the only unmistakable syllables of the whole list were KO, GO, and HO: all throat sounds.

Of the doubtful ones NO and MO were interchangeable, and so were LO and RO; and of all the others, no sound that he gave was any clew to the syllable he was trying to pronounce.

The explanation of his inability is not difficult. It was quite impossible for him to make the labial sounds when he had no upper lip, and in the short time which had elapsed since Dr. Little's operation he had not learned to use it, and the absence of any alveolar ridge in front prevented the formation of all dental and other sounds made in that locality.

One of the most peculiar features of this case was the production of K and G.

In all other cases of similar character the action of the superior constrictor of the pharynx could be seen when irritated and examined, but I could excite no visible action in him, and to ascertain where the conjunction was which formed those sounds I tried the following experiment: Pulling the tongue forward, I painted the back wall of the pharynx with some chalk and water and required him to articulate K or G;

and then pulling the tongue again forward, the contact was marked by a transfer of the chalk to the tongue, but at a lower point than I had ever seen before in any person.

It was not the superior constrictor, but the middle constrictor which was in action, and at a point a little above the glottis.

ART. III.—*Some Practical Facts in Fractures of the Thigh, verified by the Treatment of Twenty-five Cases occurring in Private Practice.** By NORMAN L. SNOW, A. M., M. D., of Albany, N. Y.

THE treatment of fracture of the femur is always undertaken with some anxiety by the surgeon. We have all, doubtless, had more or less experience with cases coming under this head, and I think I will be borne out in the statement that a review of the cases shows them to be of more than ordinary interest.

The femur is a long bone, and is not supported by any companion, as are most of the bones of the extremities; and, consequently, any variation in length, or rotation to the right or left during its treatment, has a marked effect on the result. Its peculiar relations to the body and its importance in locomotion render all the more obvious any deformity which may be found to exist after union. Hence the anxiety which the surgeon feels concerning not only the patient's comfort, but also his own reputation.

In my private practice, I have treated twenty-five cases—the results of which have taken me pretty well through the vocabulary. It is not my intention, however, to take up the society's time by an enumeration of the cases in full, but the treatment and results of a few may prove of interest to the every day practitioner, who is desirous of obtaining practical facts only. And all the more is this true, because of the too common practice of reporting only those cases whose termination is favorable. All the cases were treated by extension and counter-extension, the amount of force employed depending entirely upon the obliquity of the fracture and rigidity of the muscles. Extension dates back so many years, and has come into so general use among our own country surgeons, that I was much surprised when, in visiting some of the foreign hospitals—more especially those in London—some few years since, I found patients under treatment without it.

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* Read at February meeting of New York State Medical Society.

One of the beneficial results of this mode of treatment is the dispensing almost entirely with bandaging. Tight bandaging is very often not only the cause of delayed union, but non-union. The thigh differing from the extremities where two bones side by side protect the blood vessels, thereby allowing compression if necessary on all sides, this compression in the thigh causes the circulation of the whole leg to become obstructed and inactive; consequently, at a time when it should be most free, it is most impeded. This latter reason I believe to be one of the main causes of the greater frequency of ununited fractures occurring in both the humerus and femur. To properly care for a fracture of the above description, it is necessary to have as follows:

First: a fracture bed, on which may be placed a good, hard mattress. Second: a few short splints, and some simple arrangement, whereby extension may be applied by weight and pulley. Third: a couple of long sand bags to be used as supports for the limb; and lastly, the foot of the bed raised a few inches, thereby causing the weight of body to act as the counter-extension.

Among the first of the cases that I treated, and one which gave me far more anxiety than any since, was that of a young man, aged seventeen, tall and slender, who, while attempting to secure an unruly team attached to a heavily laden wagon, was thrown down, the hind wheel passing over his right thigh, producing a fracture of the bone at the upper portion of the middle third. It was very oblique, ends widely separated, and soft parts evidently much contused and lacerated, though not to a degree sufficient to admit of extension of either fragment. The patient was placed on a firm bed, with a hard mattress, the leg was bandaged from the foot up, short, narrow splints were placed about the thigh, and held firmly in position by a many tailed bandage. On the outside of this, the long splint extended from near the axilla to below the foot. This was attached to the foot piece, which was lengthened with a screw, while the counter-extension was the perineal belt. In consequence of the injury to the soft parts, it was necessary to remove the dressing quite often from the thigh, and this could be done very easily without disturbing the other dressing. The patient apparently did well for the first month, when he was attacked with pneumonia, from which it could hardly be said he had recovered at the end of another month. At this time—the end of the eighth week—on examination of the limb, a comparatively easy matter, owing to the shrunken condition of the muscles, there was found to be not only non-union—the fractured ends being readily movable—but very little callus. He was given the usual tonics, and such other medication as was thought necessary to assist in bone formation for another month. At the end of the third month, although there was not satisfactory union, the health of the patient required that he should be allowed more freedom. A starch bandage was applied to the whole extent of the leg, he was allowed to get up, move about on crutches, and apply a little direct pressure on the foot. His general health improved, the callus began to be more appreciable, and the bone gradually became fixed. But not until six months had passed was it sufficiently firm to hold his weight. He thus recovered after a delayed union. The ends of the fracture rounded off, and the leg was as straight as could be wished for, but it was three inches shorter, for which deformity it was necessary to wear a cork lift.

The next case of interest was that of a young man who fell from a walnut tree to the ground, a distance of thirty feet, the intervening limbs breaking the force of the fall somewhat. With other injuries, he received an oblique fracture of the right thigh in the lower part of the middle third. In consequence of the great obliquity, the soft parts were much contused by the over-riding ends of bone, and this same cause also prevented the perfect apposition desirable. After confinement for two months, union appeared pretty firm, and a starch bandage was applied. The patient was allowed to exercise with crutches, and was cautioned to bear only partial weight of body on the leg. He had enjoyed himself in this way but a few days when a sad mishap befell him. While walking the street, he was run into by a large dog—the dog's nose striking him in the popliteal space of the sound leg—his whole weight was thus thrown momentarily on the fractured limb, and owing probably more to the peculiar twist of the body than to any direct pressure, the limb gave way and he fell. He was again placed on the bed, and the examination showed a complete separation at the point of the original fracture. There was extensive swelling and discoloration for a number of days. Nature again commenced her work of repair, and in six weeks the patient was a second time able to make his appearance on the street. Union took place faster, and recovery was more safe and satisfactory, with a better coaptation of the fractured ends than at first.

A somewhat similar case to the one just mentioned was that of H. F., aged thirty-five, strong and healthy, who received an oblique fracture of the middle third of the left thigh from the wheel of a large wagon passing over it. There was much contusion of the soft parts, and an amount of blood extravasated in and above the seat of injury. The patient was placed on a fracture bed, and treated in the usual manner. I will not give a full history of the case, as in many respects it followed the usual course, but will relate an incident which occurred during the treatment, as it suffices to show how deceived we may be if we get in the habit of trusting to comparatively similar cases, having a somewhat general termination.

It was at the end of the sixth week that Dr. H. S. Hendee, an army acquaintance, who was at the time my guest, accompanied me to the patient's home, for the purpose of assisting in an examination of the limb. We both supposed that there had been sufficient time for, and that there was, quite firm union; judge our surprise when, by the most gentle efforts at flexing the knee, the bone gave way at the point of injury. As I have said, the efforts made were of the mildest, the limb in fact being scarcely raised from its resting place, and yet such was the lack of callus that even this slight strain served to undo the repairs of weeks. The consequence was that the same ground had again to be traversed, but this time with more gratifying results, for after confinement to bed, with weight and pulleys, for three weeks more, union was found to have taken place. A starch bandage was applied, and the patient allowed to get up and use the limb. Careful measurement in this case, after recovery was complete, showed three quarters of an inch shortening.

In connection with this, I will mention a case of non-union. It did not properly come under my care, but I saw it with a neighboring physician, and will mention it simply as one of interest. The patient, L. M., was seventy-five years of age. Some eight years previous she received an intra-capsular fracture of the neck of femur, which never united. She was able to get about only with the assistance of a cane or crutch. While moving about in this way, she unfortunately fell and fractured the same thigh in the middle third. Soon after this mishap a mild delirium came on, in consequence of which it was impossible to confine her in any one position. The fracture was nearly transverse, and in her movements there was occasioned very little pain or irritation. She remained in this state for six months, rolling and tossing the leg from side to side, and died. Examination of the fracture showed a large amount of callus thrown out about the ends of the bone. Week after week nature had made and repeated the attempt to fasten them, until the ends were rounded and thickened to full three times their natural size, still leaving them movable, with a slight ligamentous union. This specimen would have been of value to exhibit in consequence of the two fractures, but we were unable to get it.

My next case of interest was that of a little boy, aged eight, frail and unhealthy. The bone must have been very brittle, as the fall which occasioned the fracture was a comparatively slight one. The separation occurred in the middle third. His weak constitution and strumous appearance impressed me with the belief that union might not be as speedy and as good as desirable, and even this fear was of minor import when contrasted with the danger from whooping cough. This had already been of two weeks' duration, and such was its severity that at a later period his life was despairful. Fortunately, however, the termination was a favorable one, and notwithstanding the unusual severity of the paroxysm, the limb—through the aid of the long axillary splint used—was kept almost immovable, so that union progressed even more favorably than was anticipated, and a good result was obtained in six weeks.

As the treatment of the foregoing case was in some respects different from those previously related—mainly so because of the age of the patient—I will relate it briefly. The patient was placed at the time of his injury, and afterward remained, on a high lounge with end, but no side pieces. This in children I find preferable to a bed, as there is nothing by which they can possibly gain hold, and thereby attempt to draw themselves into nearly a sitting posture, and being high up they seem more contented to lie on their backs. The dressing of the fractured limb was very much after the usual method. The shortening, if any, was trifling.

In connection with this I will mention two other cases occurring in children. The first, a child of two years, fractured the left thigh in the lower third by falling down stairs. Much anxiety was expressed by the parents concerning the prospect of keeping the little one confined on its back and quiet. Some difficulty was experienced for the first few days, but it soon became reconciled to its fate, and no more trouble was had. In the treatment of these little ones, my experience has been that they bear confinement in one position fully as well as their seniors. In this last case, and one that followed in a child some years older, there was good union, and no perceptible shortening in six weeks.

The case of J. M. R. illustrates in a marked degree a class of cases which are fortunately extremely rare, viz., the repeated breaking, and as often successive mending, of some of the long bones. This patient first fractured his thigh bone at the age of ten years by falling down stairs. He resided at that time in New York city, and was treated at one of the hospitals there. The injury was in the upper third, and he recovered with marked shortening. The second accident befell him while a resident of some western town. In this instance he had fallen from a hay-stack, and broken the bone just below the previous union. Although there had undoubtedly been sufficient callus, yet through his or some one's neglect, there had been produced a most vicious union, with at least six inches shortening, and a very marked angle. At the time I visited him he had just met with the third of these misfortunes, and this time by a fall also. The bone was fractured about three inches below the last one—the lower portion of the middle third. The peculiar shape of the leg, and the great obliquity of fracture, rendered every attempt at direct extension entirely out of the question, as it only served to separate still more widely the broken ends. The leg was therefore dressed with the long splint and foot piece, with plenty of padding to overcome the deformity. He recovered nicely in two months, and regarded his leg as strong as before; also thought it had gained a little in length. It is ten years since I treated this man, and you may imagine my surprise when, while visiting one of the city hospitals a few weeks since, I found him again under treatment. This was the fourth fracture to the same bone, and had occurred a little below the others. He is now but twenty-seven, and aside from deformity seems healthy. In each instance the fracture was by direct violence, and each time nature had been equal to the necessary repairs.

The next case to which I call your attention is that of a fracture occurring in a bone already seriously impaired by disease, and notwithstanding which good union resulted.

Mr. S., aged twenty-eight, has for several years suffered from a diseased femur, which at the time of the accident had evidently partly recovered. He could bear some weight upon it, but was unable to move any distance unaided by crutches or other support. One day while walking in this way he received a fall, resulting in a fracture of the diseased bone. When I called to see him he was sitting bolt upright on the edge of the bed, and any movement of the limb caused such severe pain that it was necessary, in order to fully ascertain the extent of injury, to resort to anæsthesis. Before consciousness returned the fracture was reduced, he was placed in a proper position on an appropriate bed, and extension, etc., applied. A few days later the limb was encased in the plaster of Paris dressing, a fenestra being left to provide for the discharge from the sinus, and in this condition the limb was left. The case progressed admirably, good union taking place; so that by the tenth week he was able to move about on crutches full as well as before the accident.

Four cases of compound fracture, three of which were railway injuries, died during the first week; and here permit me to remark that any injury severe enough in its nature to produce this variety of fracture in so long and strong a bone, surrounded as it is by the most resisting and powerful of muscles, bounded on all sides by a congeries of nerves and blood-vessels, themselves of more than ordinary size and importance, renders it at once plainly evident why it is that under such conditions the system generally suffers so severe a shock. To this should be added, especially in railway accidents, the fact that in rare cases only does it happen that the sufferer can receive the needed aid at once. There is thus a necessity for more or less handling, or interference of some sort, and it so happens that, with an injury in itself grave, there is superadded a combination of misfortunes which reflect very seriously on the patient's future welfare. In all three of these cases there was considerable external violence from which the soft parts suffered, aside from extensive injury to other portions of the body.

The remainder of my cases were treated with extension by weight and pulley, with results varying from one inch to that of no perceptible shortening, with the exception of one, in which there was also injury to the knee-joint. This resulted in suppuration, and afterward made amputation necessary.

In children, or say persons under ten years, a simple, uncomplicated fracture of the thigh is somewhat different in form, and requires a modification in treatment, when compared with the same injury to the adult. It is more likely to be of the form known as "greenstick," being bent at an angle instead of broken; but if forced beyond this point it gives way, usually transversely to the long axis, and the ends are found to be quite jagged and irregular. There is, however, this advantage: there is no over-riding of the parts, and the bone is quite easily forced into proper position. Then comes the important question, Can they be kept quiet for a length of time? We have mentioned before that the first object to be attained is to prevent their assuming a sitting posture, and also that they may not make of the unfortunate leg a center about which to rotate the other and even the body. The long splint fastened well to the body and running down past the foot of the injured limb answers a nice purpose. The sound leg may be covered with a knit drawer or a long stocking made to extend below the foot, and tied at an angle to the side of the bed. The little one thus hampered will in most instances quietly submit, the dressing can be nicely adjusted, and but little trouble will be experienced during the treatment.

In the earlier days of treatment of this fracture in children, plaster of Paris should be entirely abandoned. The thigh does not consist of the hard muscular tissues found in the adult, but on the contrary they are soft and yielding. Now if the bandage be applied firmly, there is danger of strangulation and sloughing; and if not thus applied, the soft part soon shrinks away, leaving the leg loose and without support. Very little need be feared for the result in children, but little extension is necessary, and there is rarely any noticeable shortening.

Dr. Hamilton in the "Medical Record" of one year ago, described his method of treating these cases in children, which was to embrace both legs by a double frame-work somewhat longer than the limbs, and which was joined together below the feet by a cross piece, thus keeping them at once separated and stationary. I have not had an opportunity for trying it. I have mentioned the disadvantage of plaster dressings in the case of children, and I take this opportunity to say that I have never felt at ease when applying it in simple fracture occurring in the adult, as during the first four weeks an examination ought occasionally to be made to satisfy us that the ends are in proper apposition: a duty to which this dressing offers quite an impediment. Then too, however nicely it may be put on, in a few days there is found quite a space between the limb and its encasement, sufficient for distinct motion, and even displacement. After sufficient callus has been thrown out to keep the fractured ends in apposition, and some movement of the leg can be made with safety, then, and not till then, and simply as an additional support, can this form of dressing be made practically useful. There is a condition of fracture, however, which justifies its use. I speak now of compound, and also one in a bone diseased, where, from the sinuses present, a constant discharge is kept up. In either of these cases it serves an excellent purpose; and in the case of continuous discharges, a properly constructed fenestra obviates the whole difficulty.

A great deal has been said and written concerning the fracture of this bone, and principally because of the tendency toward limb-shortening and consequent deformity. My experience has been, that these results depend very much, first, on the obliquity of the fracture; second, the age of the patient, and amount of injury to the soft parts. The bone having been broken, the support to the body is lost, the sharp end pierces the tissues, acting, indeed, like foreign bodies, the irritated and irritable muscular fibers contract strongly, the severed ends are thus drawn one over the other, and therefore, before they can be properly replaced—if it can be said they ever are—much real force must be exerted, and a modicum of this force kept constantly in operation during the whole time of treatment.

It therefore follows—other things being equal—that the more oblique the fracture, the sharper the ends, the more will be the irritation, laceration, and contraction of the parts around, and consequently it is that we are at times disappointed with results in these cases after weeks of careful watchfulness and anxiety.

TABULATED STATEMENT OF THE FOREGOING CASES.

NAME	Age.	Situation and Character of Fracture of the Femur.	Term of Treatment.	Result.
E. S.	17 yrs,	Right, middle third, very oblique.	Six weeks........	Shortened 3 inches.
H. F.	35 “	Left, middle third, very oblique.	Ten weeks.......	Shortened ½ inch.
L. M.	75 “	Right, middle third, slightly oblique........................	Six months......	Non-union.
E. P.	8 “	Left, middle third, nearly transverse........................	Six weeks........	No shortening.
A. W.	60 “	Left, upper third, oblique........	Ten weeks.......	Shortened ½ inch.
E. S.	2 “	Left, lower third, transverse......	Six weeks........	No shortening.
J. R.	3 “	Left, middle third, transverse....	Six weeks........	No shortening.
J. M. R.	27 “	Right, middle third, third fracture of same bone.............	Two months......	Shortened 6 inches from previous vicious union.
W. S.	28 “	Right, lower third, compound, with previous necrosis.........	Ten weeks.......	Shortened 1 inch,
L. S.	27 “	Right, lower third, compound, railroad accident..............	One week.........	Death.
J. N.	35 “	Left, middle third, compound, railroad accident..............	Four days........	Death.
R. M.	12 “	Left, lower third, nearly transverse........................	Six weeks........	No shortening.
N. F.	11 “	Right, middle third, nearly transverse........................	Six weeks........	No shortening.
J. O. S.	53 “	Left, lower third, compound, surgical fever..................	Five days.........	Death.
H. M.	62 “	Right, upper third, oblique......	Ten weeks.......	Shortened 1 inch.
H. A.	25 “	Left, middle third, compound, railroad accident..............	Three days.......	Death.
J. U.	38 “	Right, lower third, implicating condyle and knee...............	Two months, one year before perfect use of joint.	Shortened ½ inch,
J. U. L.	58 “	Left, upper third, oblique........	Ten weeks.......	Shortened ½ inch.
S. O.	4 “	Right, upper third, transverse....	Six weeks........	No shortening.
H. A.	53 “	Right, upper third, oblique.......	Nine weeks.......	Shortened ½ inch.
E. D.	3 “	Right, upper third, very oblique..	Six weeks........	Shortened ½ inch.
F. F.	63 “	Right, upper third, oblique.......	Ten weeks.......	Shortened ½ inch.
W. A. B.	12 “	Right, middle third, very oblique.	Two months......	Shortened ½ inch.
I. R.	34 “	Right, lower third, oblique.......	Two months......	Shortened ½ inch.
A. S.	16 “	Right, lower third, with injury to and subsequent suppuration of knee-joint..................	Four months.....	Amputation and recovery.

Clinical Records from Private and Hospital Practice.

I.—*Rupture of the Spleen after Labor.* By C. G. Hubbard, M. D., Hornellsville, N. Y.

On March 11, 1879, I was called to see Mrs. B., aged twenty-eight, and the mother of two children. She was enjoying a fair degree of health, but wished to consult me in regard to a tumor which had been growing for two years. She was seven months advanced in pregnancy, and had recently removed from Indiana, where she had suffered from malarial fever. I found the tumor quite movable, from six to eight inches in diameter, and resting upon the enlarged uterus when she was in the upright position. I diagnosed a hypertrophied spleen, and advised no treatment until after her term of pregnancy was completed. On May 14th her labor commenced. The first stage continued for over forty hours. It was marked by excessive thirst, but there were no other evidences of fever. There were nausea and vomiting. The pains were peculiar, and had but little effect in forcing down the uterus and dilating its mouth. Squibb's ergot in half-drachm doses, repeated every half hour for several hours, had no apparent effect. As there was a head presentation, with the occiput to the left, a dilatable os, and as the pulse and general condition of the patient were good, I did not deem instrumental interference advisable until the uterus had descended to the floor of the pelvis, which had occurred by May 16th, at 2 A. M. I then ruptured the membranes, gave a hot foot-bath and a dose of ergot to the patient, when the second stage of labor came on, and, with three expulsive pains, the child was born, at 9:10. It was of the female sex, and weighed six pounds and a quarter. At 9:30 I removed the placenta with no difficulty, applied the binder, gave a quarter of a grain of sulphate of morphine, and at 10 o'clock I left the patient comfortable. I saw her again at 1:30 P. M. She had slept a few minutes, and was doing well. Was called in haste at 8 P. M., and found her dead, with distended abdomen, but no accumulation of blood in the uterine cavity. She had complained of being restless since 3 P. M., and at 6 P. M. said she was faint. Before assistance could be procured fatal syncope supervened. After-pains had been quite severe in the latter part of the day. The autopsy was made fifteen hours after death. There were present besides myself Drs. J. S. Jamison, Samuel Mitchell, C. S. Parkhill, M. J. Baker, and S. Mitchell, Jr. Upon opening the abdomen the intestines were found distended with gas. All of the abdominal organs, including the uterus and its appendages, were in a healthy condition, except the spleen; this was of normal color, shape, and consistence, but it was ten inches in length, six inches in breadth, three inches in thickness, and weighed just four pounds. Two inches from its lower end, on its anterior surface, was a fissure, semi-lunar in shape, and extending nearly transversely across it. The fissure was six inches long, one fourth inch in width, with ragged edges, and evidently had recently been made. Surrounding the spleen as it lay in position was more than a litre of clots of blood. From the cavity of the abdomen was taken over eighty ounces of blood. No section of the spleen was made, as I wished to preserve the pathological specimen. The cause of death was patent to all present, but at what time the rupture occurred was more difficult to determine. The following are the reasons which lead me to the conclusion that it was subsequent to the completion of labor and but a short time previous to death:

There was no hæmorrhagic tendency or softening of the spleen, as is usually the case in hypertrophy from paludal poisoning. The placenta was uncommonly firm, and but little blood lost during labor. There were no symptoms of leucæmia or melanæmia. The general features of the fissure—its length, width, and depth—the amount of blood lost, and the sudden fatal syncope, all would seem to show that the spleen ruptured all at once and not gradually, causing death in a short time. The first stage of labor was protracted, yet at no time did the pains produce sufficient effect upon the uterus to be detected with the finger on the cervix. The vomiting was quite troublesome; yet there was no straining, but the stomach simply rejected its contents. There was no cause during the first stage of labor sufficient to rupture such a firm spleen. The second stage was very short and easy; there were but three pains, of moderate force. For at least five hours subsequent to delivery there were no signs of rupture, viz., sudden severe pain in the region of the spleen, with paleness, small pulse, cold extremities, and tendency to syncope. In climates where malarial diseases are endemic, swelling and softening of the spleen often occur to such an extent that slight external causes produce rupture. In Bengal this accident is frequent. Sometimes it is an accompaniment of typhus fever. In some parts of Hindostan every third person has a tumor of the spleen. Simpson cites three cases of rupture of the spleen in connection with pregnancy. At times the spleen is torn into several pieces. Mosler saw a case where a ruptured spleen was filled with cavities from the size of a pea to that of a goose-egg, and all contained coagulated blood.

Peritonitis has never been observed to follow rupture of the spleen, although it follows rupture of the liver, pancreas, and other abdominal organs.

Proceedings of Societies.

NEW YORK THERAPEUTICAL SOCIETY.

(Concluded from June number.)

THERE are five cases of laryngeal disease: two of diphtheritic croup with tracheotomy, and three of laryngitis, of which one with tracheotomy.

The two cases of diphtheria are both reported by Dr. A. H. Smith. They occurred in sisters, aged respectively four years and ten months and two years and nine months. In the first child tracheotomy was performed on the third day, when intense dyspnœa existed, the face being quite dusky, and the lower ribs retracting during inspiration; at this time the lungs were in good condition. For thirty-six hours after the operation the child did well, then the temperature rose from 100½° to 102½°, and in forty-eight hours to 103½°, and dyspnœa returned with severity. By this time mucous râles were heard over both lungs; respiration 40; the pulse was 124, and its force decreased markedly during each inspiration, showing exaggerated thoracic aspiration. At this time 12 grs. of calomel were given. Seven hours later, and after two watery stools, the respirations had fallen to 36, and temperature to 101½°, and pulse remained unchanged. Six hours later the respiration had fallen to 29, the temperature only rose ½°, but the pulse to 136. At this time respiration began to be more prolonged than the inspiration. Oxygen gas was employed with little effect, and the child died six hours later, three days after the operation.

Dr. Smith remarks that the calomel was administered first in order to check the rise of temperature; second, to combat the hyperæmia of the lungs. The fall of temperature two degrees after the calomel appears at first sight as if the calomel exercised a beneficial effect. But it is to be noticed that this fall of temperature was accompanied by a rise of pulse, and increase of the pulmonary obstruction, which resulted in death twelve hours later. In the judgment of the reporter, therefore, the fall of temperature was only an indication of deficient oxidation, of the approaching fatal asphyxia. The calomel evidently failed to control the pulmonary lesion.

In the second case, the child of two years, the operation was performed on the second day. Immediately after the operation the pulse was 160; on the next day it had fallen to 156, the temperature was 104½°, the respiration 48. There was excessive restlessness; much muco-pus was coughed up; condition of lungs not stated. Eight grs. of calomel were given. Six hours later the temperature was 103½°, and pulse and respiration unchanged. Eighteen hours later the temperature fell to 99°. This was thirteen hours before death, and, as before, the fall of temperature is to be regarded as an indication of the præ-mortal asphyxia.—[Rep.] Although, therefore, in the words of Dr. Smith, there "was a fall of temperature of 5½°," it could hardly be considered as a favorable circumstance, nor indeed as especially connected with the calomel.—[Rep.]

The first case of non-diphtheritic laryngitis is also reported by Dr. A. H. Smith. It is especially remarkable as being a case of successful tracheotomy in a child only twenty-five months old. No membrane had been seen in the pharynx. The dyspnœa increased gradually for several days—was temporarily relieved by inhalations of lime-water, but returned in two days with great severity. When the operation was decided upon, the face of the child was dusky, the prolabia livid, there was incessant jactitation. The dyspnœa was immediately and completely relieved by tracheotomy; six hours after the operation the temperature was 101°, and pulse 144, the respiration 48. Five hours later the temperature had risen to 103¾°, the pulse and respiration remained unchanged. Ten grs. of calomel were then given to avert, if possible, threatened pulmonary complication. In an hour and a half the temperature had fallen to 102¼° (a degree and a half). The first stool did not occur until twenty-four hours after the calomel. The pulse and respiration remained unchanged. In twenty hours the temperature rose to 104°. The dose of calomel was then repeated. In five hours the temperature fell to 103½° (half a degree). Ten grains of quinine were then given. The next morning the temperature had fallen to 102½°, and the pulse, for the first time, to 126. From this time the case did exceedingly well. Ten grs. of quinine were given daily for several days, and the air of the room kept constantly warm and moist.

It is noticeable, in this interesting case, that, although the first dose of calomel was followed by a fall of temperature of 1½° in an hour and a half, the second caused no more than half a degree fall in five hours. It is not altogether clear what part the calomel played in the recovery, or whether the first temporary fall of temperature were not more accidental than due to medicine.—[REP.]

Dr. Smith remarks, in regard to the administration of calomel after tracheotomy, that the danger depends less on obstruction of the bronchi by false membranes spreading from above downward than upon blocking of the alveoli by fragments of exudation and muco-pus, aspired toward them, and which can not be ejected, owing to the inefficiency of cough after the function of the glottis in the cough mechanism has been abolished by the opening made below the larynx. On this account every effort should be made to lessen hyperæmia of the bronchi and consequent catarrh, and if calomel can be shown to control such hyperæmia, yet not cause excessive purging or salivation, it should be welcomed even in cases of zymotic poisoning.

The question remains, however, and has already been raised hundreds of times in connection with diphtheritic croup, whether hyperæmia dependent upon zymotic poisoning can be as efficiently controlled by calomel as simple hyperæmia, and whether exudations indicative of profound alterations of the blood are likely to be lessened by an agent that tends to destroy the morphological elements of the blood, the red corpuscles.—[REP.]

The fourth case of laryngitis is by Dr. McLean, of Elizabeth—child of seven months attacked with an acute laryngitis, constantly growing worse for thirty-six hours, when it received 10 grs. of calomel. In one hour dry, whistling breathing became altered; in two hours the child was decidedly better.

The fifth case, reported by Dr. A. H. Smith—a child of five, with acute laryngeal catarrh, without notable dyspnœa. Recovered in two days after 15 grs. of calomel. Forty minutes after the administration of the calomel the temperature fell from 103½° to 102¾°, thus ¾ of a degree.

Six unclassified cases remain. First by Dr. Agnew. Commencing inflammation of the eye, after operation by abstraction for cataract, five hours previously; 15 grains of calomel given at once; same dose repeated in 24 hours, and again, 11 days later. Arrest of inflammation and good recovery from operation.

The second is by Dr. A. H. Smith. The diagnosis is not stated; but from the description, it seems to have been a case of acute encephalitis in a child of five and a half years; 20 grains of calomel were given on the first day of the illness, and dose was not repeated. The child died on the fourth day.

The third case, in a boy of twelve years; an irritative fever, resulting from a sprain. Reported by Dr. Bayles. The pulse and temperature are not mentioned; but a great restlessness, threatening delirium, is said to have existed. This subsided in an hour after the calomel (15 grains).

Fourth case, also by Dr. Bayles, is one of melancholia with violent intermittent convulsions, which were at once arrested by 30 grains of calomel. The subsequent history of the case is not stated.

Fifth case, also by Dr. Bayles—gastritis in two children from ingestion of some unknown poison. The fever was arrested by 12 grains of calomel.

Sixth case is by Dr. Smith—tubal nephritis with anasarca, then suppression of urine and coma; after 30 grains of calomel, temporary improvement, return of urinary excretion. But 12 days later, patient again became stupid and died comatose.

At first glance, the foregoing list of cases, ranging from a sprained ankle to an acute encephalitis, might seem too heterogeneous to admit of rational interpretation. As far as may be inferred from the reports, the administration of the calomel was directed against the symptoms either of dyspnœa, or of fever, or of restlessness with insomnia. The anatomical conditions existing at the time of administration were extremely various; they may be summed up as: inflammation—simple, traumatic, or zymotic; congestion, from vaso-motor paralysis, either febrile or dependent on organic, cardiac, or renal disease; finally, serous effusions, in all cases into the pleura, in consequence of such organic disease.

As regards the relations between the clinical symptoms and these anatomical conditions: The dyspnœa, which is noted as existing in a marked degree in seventeen cases, depended upon parenchymatous pulmonary inflammation or congestion, and was accompanied by fever thirteen times; was apyretic and associated with phthisis, or with passive pulmonary congestion from renal or cardiac disease four times; on chronic heart disease, once. In the latter case, pulmonary congestion probably existed, but is not so stated. In three cases, the dyspnœa resulted from hydrothorax. In all the cases of febrile dyspnœa, relief was obtained; in nine cases with the first, in four with the second, dose of calomel. In one case of hydrothorax, and in three of cardiac disease, the dyspnœa was also relieved. In two of the cardiac cases, impending suffocation seemed to have been averted by the medication. From this, it is evident that the relief to dyspnœa in the pyretic cases was not due to a "sedation" of pulse or temperature, even when it coincided with them, since as great relief was obtained when such sedation was not required; it must therefore have depended upon some influence exerted on the distended pulmonary blood-vessels, the only condition common to all the cases of dyspnœa which were relieved, apyretic as well as febrile. In two of the cases of hydro-thorax, no benefit was obtained, and the condition of the phthisical patient seems to have always deteriorated after the calomel. As the dyspnœa of phthisis depends on loss of lung tissue, it is, indeed, difficult to see why calomel should relieve it. The calomel plainly exercises no such influence on the respiratory center, as oxygen for example, thus diminishing its susceptibility to carbonic acid in the blood, but only aids when it can alter anatomical conditions upon which such accumulation of carbonic acid depends. When this was impossible, the dyspnœa remained unrelieved. Thus, not only in phthisis and hydrothorax, but also in diphtheritic croup, was the calomel quite inoperative for this purpose.

In regard to the symptom *fever*, it was, in all the cases in which it existed, associated with inflammation. It was always an inflammatory fever, whose arrest coincided with an arrest in the inflammatory process, but by no means with resolution of the inflammatory lesion. When, therefore, the dose of calomel was followed by a fall of temperature, it was also followed by an arrest in the inflammation, and the fever did not rise again; until this was effected, the temperature remained unchanged.

In this respect, the calomel differed markedly from such agents as the cold baths, salicylic acid, and, to a less extent, quinine, which may lower the temperature to the normal for a while, although the morbid process remain unaffected, and the fever be destined to return.

When the inflammation remained permanently unaffected by the calomel, the high temperature also persisted. This was observed in the two cases of diphtheria, the case of encephalitis, of uræmia, pleuritis, and endocarditis, and of phthisical desquamative pneumonia. In none of these cases was the temperature high; in the diphtheria alone did dyspnœa exist from mechanical obstruction.

In four cases the effect of calomel on the inflammatory process was, from the nature of the organ affected, more important than the reduction of temperature. These were the two cases of rheumatic endocarditis, the case of ophthalmitis, and the cases of laryngitis. These are cases in which the administration of calomel has been considered a measure of classical utility. The large doses given seem to have acted as well but not very differently from the smaller doses more frequently employed; that is to say, the fibrinous exudative process was arrested, and with it the irritative fever which it had excited. In the pulmonary inflammations, the records of the auscultations and percussion signs are not, as a rule, sufficiently precise to enable us to infer from them whether the lesion progressed, or receded, or remained stationary. In only one case, however (Dr. Bradley's), does the record state that the "area of dullness was diminished" after calomel, and this within ten hours. In the others, where the physical signs are noted, they were found unchanged even where the subjective symptoms were relieved.

In Dr. Leaming's case of central pneumonia, the lesion advanced near the surface, so that subcrepitant râles were first heard after the sedative dose of calomel.

In regard to the time of action, the effect of the calomel upon dyspnœa, fever, or nervous excitement, can not be proportionately measured by reference to our cases. In five of the cases where the calomel was given on account of nervous symptoms, either extreme restlessness, insomnia, or delirium, the patient was watched and the soothing result noted as occurring in an hour. The same where the action of the heart was tumultuous. In none of the cases of dyspnœa was the patient seen in less than ten or twelve hours after the administration of the drug; then, with the exceptions already mentioned, he was invariably found relieved.

In sixteen pyretic cases the temperature was lowered at the same time; in five the dyspnœa was found to be somewhat relieved at the next examination of the patient, while the temperature did not fall until one or two days later, and after a second dose of calomel.

In one case (by Dr. Smith), though the temperature remained down, delirium persisted, and the patient died four days later. Just before death the temperature rose to 105°.

In forty-four cases the calomel was given without other medicines. In six cases other medicines were administered simultaneously with the calomel. These, in the majority of cases, were stimulants or quinine, or both. In one case of acute and violent pulmonary congestion, $\frac{1}{8}$ grain elaterium was given with the calomel.

The purgative effect of calomel was produced in some cases, but in various degrees. The number of passages varied from two to eight. In no case was there any hypercatharsis; but in two cases of phthisis the occurrence of eight stools was followed by considerable exhaustion. The purgation occurred in from two to six hours after the administrations of the calomel.

The cathartic effect of the calomel was observed in four different relations to the therapeutical effects. In sixteen cases catharsis occurred in from four to six hours; in two hours when elaterium was given at the same time; and relief to dyspnœa or fever followed this. In seven cases, such relief was obtained before any purgation had taken place. In five cases there was no purgation, and in four of these the issue was fatal. In three cases, purging was produced in four or five hours, but the temperature, nevertheless, did not fall until after a second dose. In twenty cases the effect of the calomel on the bowels is not mentioned.

In the cases where the calomel was given for the relief of nervous symptoms, and this relief began to be obtained within an hour, it preceded purgation. As a purgative, the heroic dose of calomel seemed to differ little from the ordinary five- or ten-grain dose, habitually given as a purgative. There is no such proportion between the dose and the effect on the intestine as exists in the case of directly irritant purgatives. The inference is that the calomel, administered in this way at least, does not act directly upon the intestinal canal, but only by elimination after previous absorption, and circulation in all the tissues of the body.

As bearing upon this point, your reporter would beg leave to communicate the following observations, both of cases of limited parametritis: To the first patient fifteen grains of calomel was given in the ordinary way, i. e., it was swallowed, and the mouth rinsed with water which was also swallowed. (This is the method recommended by Graves.) Two hours later a passage from the bowels occurred, not excessive, but attended with symptoms of faintings and partial collapse, from which the patient did not recover for an hour. The next day the temperature, which had only been 102°, fell to normal, but subsequently rose again to its original point, and remained there for two or three days. The exudation did not entirely disappear for a fortnight.

The other patient received on the first day five grains of calomel dry on the tongue, and rubbed into it, so that little or none could be directly swallowed. In twenty-four hours later, no perceptible effect of any kind had been produced. Ten grains of calomel were then given in the same manner. Twenty-four hours after this second dose three copious passages from the bowels occurred at short intervals, but unaccompanied by any feeling of faintness or depression. The night of the same day the patient had a profuse cold sweating. On the following day, forty-eight hours after the second dose, there was again a copious evacuation, and again a profuse sweating in the night.

This same observation shows: 1. That five grains of calomel, an ordinary purgative dose when taken into the stomach, failed to act as such when rubbed into the tongue. 2. That 10 grains, or 15 grains in two doses, taken upon the tongue, produced as much purgation as was noticed in a large number of cases after 20, 30, or 40 grains. 3. That the purgation was not due to direct contact of the calomel with the mucous membrane of the intestine, because such a very small quantity of it was swallowed, and because the catharsis did not take place until so long after the administration of the medicine. 4. The cold sweating, occurring about the same time as the catharsis, indicated a direct irritation of the nerves of the sweat glands by local action of the mercury or of mercurialized blood. The diaphoresis was entirely different from the warm sweating produced by drugs which stimulate the cutaneous circulation: entirely analogous, on the other hand, to the sweat of the death agony, when the nerves of the glands are irritated by effete material accumulated in the capillaries, or to the local sweatings experimentally produced by local mechanical or electrical irritation of the nerves. It showed, therefore, that the mercury had been thoroughly diffused throughout the body, reaching the eliminating glands of the skin a little later than the eliminating glands of the intestine. In none of the other observations is mention made of diaphoresis; and, in all the others, on the contrary, in which a purgative effect was produced by the calomel, this occurred at a much shorter interval than in the case just quoted. It appears probable to your reporter that, in these other cases, although the calomel was placed dry on the tongue, no such precautions were taken to insure local absorption as in the last case mentioned; that, consequently, more was swallowed, and allowed to act as a local purgative. The variations in the purgative effect observed after the same dose would be explained by the varying quantities which were directly swallowed before conversion, and which, in the stomach, would give rise to the formation of the bichloride. As in the ordinary administration of calomel, the bichloride, rendered soluble by combination with chloride of sodium and a double salt, and reabsorbed, would contribute to the constitutional effect of the mercury; the undissolved portion, by irritating the mucous membrane, would increase the purgative effect, the latter principally dependent on the elimination of mercury with the bile. The same considerations may serve to explain one remarkable fact which appears from the observations; namely, that the calomel was given in doses ranging from 20 to 60 grains, and even 80 grains, when half of this amount was repeated at short intervals, and yet there were no variations in either the physiological or the therapeutical effects in any way proportioned to this erroneous variation in the dose. We must infer, as in the often quoted cases of the teaspoonful doses of the Southern States, that, above a certain amount, the calomel remains inert because undissolved, and passes through the alimentary canal as innocuously as a marble, or, as Kohler remarks, that the large amount undissolved incloses that which is rendered soluble, in an inert mass. When the calomel is rubbed into the tongue, it seems probable that a considerable portion is converted into an albuminate, in the alkaline secretions of the mouth, and as such, locally absorbed. In only two cases out of the 50 did stomatitis occur. This is in accordance with former experience with these large doses of calomel.

Is it possible from the foregoing heterogeneous list of cases to frame any theory of the action of calomel in them? Heterogeneous as the cases are, one condition is common to all of them, namely, sudden over-distension, paralytic congestion of extensive regions of small blood-vessels. With the exception of Dr. Agnew's case of ophthalmitis and the cases of laryngeal inflammation, this paralytic congestion existed in the lungs or brain, and in one case only in the stomach. It sometimes resulted from mechanical impediments to the circulation; sometimes was collateral to inflammation; sometimes the result of reflex irritation. This existed in all the cases of cerebral hyperæmia which yielded to treatment. In the one case where there was cerebral inflammation as well as congestion, the calomel produced no effect.

Since in so many cases the calomel relieved the symptoms dependent upon sudden extensive neuro-paralytic congestion, we must infer that it removed the congestion itself. Two theories remain. The first is that adopted by Dr. Leaming and Dr. Lente. It supposes a reflex contraction of blood-vessels by means of a powerful local stimulation of certain nerves encountered in the alimentary canal. It is known that irritation of the splanchnic nerve causes contraction of the blood-vessels of the intestine, and such irritation could already be effected in the stomach, thus explaining the action of calomel in dysentery. Irritation of the gastric filaments of the vagus, again, is known to be able, on the one hand, to stimulate the vaso-motor center, causing contraction of blood-vessels in the lungs and elsewhere; on the other hand, to excite the depressor nerve of the heart, thus slackening the pulse. By this mechanism ipecac apparently acts in lessening pulmonary hyperæmia; it is not impossible that large doses of calomel should do the same. According to the second theory, we should infer, from the known diffusibility of mercury throughout all tissues, from the irritation caused by its local application to normal blood-vessels, and from the moderation of hyperæmia by local application in catarrhal inflammations, as in conjunctivitis or in gastric catarrh, that calomel causes a contraction of morbidly distended blood-vessels, by means of direct local irritation of their muscular coats. The strong tendency of all mercurial compounds to combine with albumen and the albuminous constituents of living tissues may probably explain this irritation, which, in morbid conditions, becomes a stimulation. On this account it should be expected to prove valuable in such cases as experience has shown to be the case, i. e., where cardiac stimulants have proved unavailing to enable the central organ of circulation to overcome the immense obstacles at the periphery. This obstacle once diminished, quinine and brandy once more come into play. It is interesting in this connection to remember the eulogies once made by Traube upon acetate of lead for this same purpose of averting pulmonary œdema. The lead is in many respects analogous in its action to mercury—like it, forming compounds with albumen, and, in virtue of this tendency, condensing and contracting blood-vessels.

It is not at all clear from the cases of the report whether the heroic dose of calomel arrests the processes of nutrition resulting in oxidation, and contributes to the fall of temperature in this way. It is not at all impossible that this is the case; but the question remains to be decided by more exact experiments. It is certain that in a very considerable number of cases a decided fall of temperature was effected after a single dose of calomel. As seen by the analysis, this often only took place after a second dose, and this often coincided with the moment for natural defervescence. The pulse merely followed the temperature.

We have already suggested an explanation of the apparent superiority of the present method of administration—namely, large doses dry on the tongue, or rubbed into it. We have inferred that the calomel was converted into an albuminate in the mouth, and as such a certain portion was more rapidly absorbed and diffused than it could be even from the stomach.

While a dose of 15 or 20 grains seems necessary to effect the purpose, there is no evidence—certainly none from the foregoing cases—that a larger dose has any larger effect.

Finally, your reporter would beg leave to suggest that, while a valuable utility seems to inhere in this method for appropriate cases, its indications are precise; and it should not be carelessly employed unless these really exist, and with a degree of intensity sufficient to justify so heroic a remedy.

Bibliographical and Literary Notes.

ART. I.—*Transactions of State Medical Societies.*

1. "Transactions of the Thirty-third Annual Meeting of the Ohio State Medical Society," held at Columbus, May 14, 15, and 16, 1878. 8vo, pp. 228. Columbus, 1878.
2. "Transactions of the Medical Society of the State of New Jersey, 1878." 8vo, pp. 390. Newark, 1878.
3. "Transactions of the Medical Society of the State of Pennsylvania, at its Twenty-eighth Annual Session, held at Pittsburg, May, 1878." Vol. xii., part i. 8vo, pp. 511. Philadelphia. Published by the Society, 1878.
4. "Transactions of the Twenty-fifth Annual Meeting of the Medical Society of the State of North Carolina, held at Goldsborough, May 17, 1878." 8vo, pp. 98. Wilmington, 1878.
5. "Transactions of the Medical Association of Georgia." Twenty-ninth Annual Session. 8vo, pp. 279. 1878.
6. "Minutes of the State Medical Society of Arkansas, at its Third Annual Session." 8vo, pp. 44. Little Rock, 1878.
7. "Transactions of the Medical Association of the State of Missouri," at its Annual Session, held in Sweet Springs, May 21 and 22, 1878." 8vo, pp. 176. St. Louis: George O. Rumbold & Co., 1878.
8. "Medical Communiations of the Massachusetts Medical Society." Vol. xii., No. 4. Second Series. Vol. viii., part iv. 8vo. Boston, 1878.
9. "Proceedings of the Connecticut Medical Society, 1878." Eighty-seventh Annual Convention, held at New Haven, May 21 and 22. 8vo, pp. 284. Published by the Society. Hartford, 1878.
10. "Transactions of the Iowa State Medical Society, 1877–'78." Vol. iii., 8vo, pp. 196. Des Moines, 1878.
11. "Transactions of the Medical and Chirurgical Faculty of the State of Maryland." Eightieth Annual Session, held at Baltimore, Md., April, 1878. 8vo, pp. 208. Baltimore, 1878.

IN the "Ohio Transactions" we notice a pleasant "Address of Welcome," by Dr. Chauncey P. Landon. The retiring president, Dr. W. H. Philips, makes "The Testimony of Medical Experts" the subject of the "Annual Address."

The first scientific article is by Professor J. W. Hamilton, M. D., who publishes some interesting cases of "Maxillary and Naso-Pharyngeal Tumors," with the operations for their removal.

Dr. J. H. Buckner's paper on "Throat and Nasal Affections in their Relation to Diseases of the Ear" is practical, inasmuch as in calling attention to many of the causes of ear diseases it will exert an influence in the prevention of those affections.

C. S. Muscroft, M. D., contributes a paper on "The Use of Sub-Sulphate of Iron as a Local Remedy."

Theodore A. Reamy, M. D., advocates the use of the curette in certain forms of uterine diseases. Three cases are recorded.

Dr. R. L. Sweeny makes "A Report on Chronic Inversion of the Uterus." Ever since Dr. White, of Buffalo, first demonstrated to the profession the possibility of reduction in case of chronic inversion of the uterus, successful cases of the operation have been not infrequently reported.

Dr. G. S. Franklin contributed a paper on "Quinine as an Antiseptic."

"Mental Action, Normal and Abnormal," is the title of a brief article by J. C. Kennedy, M. D.

Dr. Calvin H. Reed's article, "Quinine a Prophylactic in Scarlet Fever," includes a report of twenty-nine cases. Of twenty instances in which children took quinine nineteen escaped, while of the nine children who did not take it none escaped.

Dr. D. B. Smith, of Cleveland, makes an excellent "Report on the Progress of Ophthalmology during the year 1877." The article is concise and will not bear epitomizing.

Starling Loring, M. D., makes the "Report on the Progress of Medicine." The author does not put his points very concisely, and discusses questions not entirely relevant. Nevertheless the paper contains some interesting matter.

Dr. D. B. Leonard makes the "Report of Committee on Obituaries."

The President of the New Jersey Society, Dr. H. R. Baldwin, makes a very good address entitled "The Communicable Diseases of Childhood, and some Suggestions for their Prevention."

The first essay is contributed by Dr. Alexander N. Dougherty, on "Observations on Glycosuria, Historical and Clinical." The article is very elaborate, and contains reports of several cases of absolute cure of diabetes by strict adherence to prescribed diet. The Camplin biscuit * is highly recommended, also milk in connection with other articles of food which do not contain sugar.

The second essay is somewhat elaborate, on "Rectification of Abnormal Fœtal Positions; or, Some Abnormities of Childbirth and their Treatment," by Thomas Ryerson, A. M., M. D. It evinces considerable research and practical knowledge on the part of the author. It can not be conveniently epitomized here.

Dr. C. F. Deshler contributes an essay on "The Medical Profession and the Public Health."

J. B. Mattison writes on "Opium Inebriety."

Next follows the "Report of the Standing Committee"; "Obituaries"; and "Reports of District Societies." The last named reports occupy a large space in the volume, and contain here and there cases of special interest.

In the "Pennsylvania Transactions" President D. H. Agnew's address on "Errors of Diagnosis" is excellent.

Dr. William Goodell, in the "Address in Obstetrics," confines his observations to lacerations of the cervix uteri. The paper is an exceedingly interesting one, inasmuch as it gives a hint as to the prevention of so many cases of the accident. The author counsels non-interference with the first stage of labor, such as rupture of the membrane before complete dilatation has taken place, stretching of the cervix with the finger, etc. It is remarkable that so many persons suffering from uterine ailments are subjects of laceration of the os uteri. Dr. Goodell thinks that one in every six cases of uterine disease under his treatment is a case of laceration. Full directions are given for treatment, and especially for the operation for its cure. The question was discussed at the session of the New York State Medical Society in 1878.†

Dr. S. W. Gross, in the "Address in Surgery," makes "The Rational Treatment of Stricture of the Urethra" his

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* The Camplin flour is deprived of starch, and may be obtained at Sheddon's pharmacy, corner Broadway and Thirty-fourth street, New York, at $5 per 10 lbs.

† Vide "Transactions" or our notice of the same.

theme. The author advocates internal urethrotomy from *behind forward.*

Dr. John Curwen makes an excellent "Report on the Care of the Insane."

Dr. S. D. Risley contributes a paper on "Iritis, a Clinical Study." It is based upon one hundred and fifty-three cases of iritis treated in private and hospital practice.

"Anæsthesia in Parturition" seems to be a sort of hobby with A. H. Halberstadt, A. M., M. D., judging from his article bearing the above title.

Dr. John V. Shoemaker recommends semi-weekly puncturing in cases of obstinate rosacea.

E. Dyer, A.M., M.D., in an article on "Sympathetic Ophthalmia," recommends enucleation in appropriate cases and at appropriate times.

The same author contributes the next article, on "The Adoption of the Metric System in Medicine." He at first explains very clearly what the metric system is, and then makes a plea for its general employment in this country.

Dr. John T. Carpenter, in a paper on the "Local Origin of Constitutional Diseases," tries to demonstrate a local starting-point in certain of the diseases which are not now recognized as primarily local. For example, the author thinks that "smallpox is a bilious fever," having its starting-point in the liver, and that yellow fever has a primary origin in the same organ.

Dr. J. B. Murdock contributes an interesting "History of a Case of Dislocation of the Hip, Complicated with Fracture of the Femur, with Remarks."

Dr. S. S. Koser contributes a short article on "The Use of the Plaster of Paris Jacket in the Treatment of Fractures of the Spine."

C. Galen Treichler, A. M., M. D., writes on "Preparatory Education."

Charles K. Mills, M. D., in a paper on "Psoas Abscess Simulating Nervous Affections," cites some cases illustrating the liability to error in diagnosis.

A committee, composed of Drs. H. Corson, A. Nebinger, and L. L. Sibbet, make a favorable "Report on the Propriety of Having an Assistant Female Superintendent for the Female Department of every Hospital for the Insane under the Control of the State."

Dr. John S. Dickson gives the "History and Treatment of Two Ovariotomies."

Dr. William Pepper makes "A Contribution to the Clinical Study of Catarrhal Inflammation of the Bile-ducts, with Remarks on the Use of Nitrate of Silver in its Treatment." The article is very excellent.

Laurence Turnbull, M. D., gives an interesting account of "Three Cases of Disease of the Mastoid Process: their Diagnosis, Pathology, and Treatment."

The same gentleman also gives "Experiments and Observations on the Physiological Properties of Hydrobromic Ether." This preparation is recommended on account of the short time it requires to anæsthetize a patient, and on account of its rapid elimination from the system by the air passages.

Next follows the "Report of Committee of Revision of the U. S. Pharmacopœia of the Philadelphia County Medical Society."

Dr. Oscar H. Allis contributes "Some Remarks upon the Descent of the Testes, and the Formation of Oblique Inguinal Hernia and Hydrocele."

Dr. W. J. Asdale contributes a case of "Excision (Primary) of Elbow-Joint for Gunshot Injury."

Dr. E. Griswold writes on "The Puerperal Diseases of the Shenango Valley."

The "Address in Hygiene," by Dr. Benjamin Lee, deals almost entirely with the diphtheria epidemic occurring in Pittsburg last year.

The remainder of the scientific portion of the volume is made up of the "Reports from County Medical Societies," many of which are elaborate and contain interesting matter.

The first scientific article which appears in the "Transactions of the North Carolina Medical Society" is entitled "Diphtheria," by Dr. Charles Duffy, Jr. It is quite elaborate and covers the ground as to the many prevailing theories pretty well. The question of tracheotomy is discussed at some length.

Richard H. Lewis, M. D., reports three cases, namely, "Capsulo-Lenticular Cataract, Corneitis, Amblyopia."

Dr. W. T. Ennett delivered the "Annual Address . . . ," which is mostly devoted to the biography of Harvey.

Dr. William Little reports a case of "Suppression of Urine of Ten Days' Duration."

Dr. J. K. Hall also contributes an article on "Diphtheria." He thinks it is a constitutional disease primarily, in which opinion we do not concur; nevertheless, the treatment suggested is such as meets with our approval. The article lacks careful proof-reading.

The "Valedictory Address," by the President, Robert L. Payne, M. D., deals especially with the "Influences which act upon the Child before Birth." The question of heredity is discussed at length, and many circumstances are cited apparently in support of the view that maternal impressions during pregnancy may affect or "mark" the offspring.

In the "Georgia Transactions" the address of the President, Dr. W. O'Daniel, appears first, followed by the "Annual Oration," by William R. Burgess, M. D. The title of the paper is "Hasty, Unwise, and Unfortunate Medical Literature," and it contains some very useful hints. Too much commonplace literature is, without doubt, being published.

Dr. B. R. Dostor reports a case of "Amputation of the Leg for Necrosed Tibia of Thirty-four Years' Standing."

Dr. D. F. Walker, in a "Report of Cases," relates a case of abnormal conception and one of eclampsia. In the former case a small fœtus, measuring three and three quarters inches in length, was found in the uterus after the delivery of an ordinary-sized child. The author expresses the opinion that hour-glass contraction only occurs in connection with adhesions of the placenta. General experience would hardly lend support to this view, although we believe the two conditions are frequently associated. When the placenta is completely adherent we believe it can rarely be removed entire.

George W. Grimes, M. D., contributes a case of "Tubercular Meningitis."

Dr. J. C. Le Hardy contributes an elaborate article on "Yellow Fever" as it occurred in Savannah in 1876. He believes it to be a *malarial* disease originating *locally*. Its prevention consists in thorough drainage and the enforcement of other good hygienic conditions; the treatment is begun with a dose of calomel followed with quinine.

Dr. James B. Baird writes an elaborate article on "Neuralgia and its Modern Therapeusis." The treatment is directed as far as possible against the cause of the affection, and with a view to augment the powers of the system in a constitutional way; and electricity—especially galvanism—and hypodermic injections of morphia, are highly recommended for special measures.

A. W. Calhoun, M. D., makes a "Report of One Hundred and Thirty Operations for Strabismus."

Dr. A. W. Griggs makes the "Report of the Section on Gynæcology for the Fourth Congressional District," including the report of quite a variety of cases belonging to that class.

Dr. S. H. Stout contributes a paper on "Psoriasis, Non-syphilitica, popularly known in a Variety of Forms as Tetter."

Dr. Thomas S. Powell writes on "The True Physician."

"The Application of Pressure in Diseases of the Uterus," by V. H. Taliaferro, M. D., furnishes some useful hints. The author employs a cloth tent for intra-uterine medication. The article is quite lengthy.

Dr. W. T. Goldsmith writes an article of some length on "The Pith of the Dried Corn-stalk as a Uterine Tent; and General Remarks upon the Use of Uterine Tents in Gynæcological Practice, with Cases."

Dr. A. A. Smith makes the "Report of the Section on Surgery for the Third Congressional District," including a case of incised wound of the abdomen and two cases of hæmorrhoids.

In the "Report of the Section on Surgery for the Fifth Congressional District," Dr. John T. Johnson includes a report of a number of interesting cases, and discusses the question, "What is the True Value of Caustics in the Treatment of Venereal Ulcers?"

In an article entitled "Diagnostic Value of the Soft Palate, as compared with the Tongue, in certain Pathological Conditions," by Dr. William Abram Love, a comparison of the appearance of those organs in certain diseased conditions is drawn. In "biliousness" the roof of the mouth is said to be tinged with yellow.

Dr. C. B. Leitner writes on "The Tar Bandage," and Dr. J. B. Roberts reports an "Obstinate Case of Hiccough." The last-named article closes the scientific portion of the volume.

The Arkansas brochure contains no scientific papers other than reports of committees. The address of President Carrigan is very good.

Dr. G. W. B. Moughs (Missouri) contributes a paper on "The Influence of Uterine Displacements in producing Abortion, Dysmenorrhœa, and Sterility, and their Treatment, with Cases." The paper, although practical, is more elaborate than necessary, and contains nothing especially new. Moreover, it contains several inelegant expressions.

"The Ear in the Exanthemata" is the title of a paper by Dr. H. N. Spencer. The author thinks the catarrhal symptoms should be treated more universally than they are, and he advocates puncture of the tympanum when suppurative inflammation of the middle ear occurs.

In a paper on "Tubercular Laryngitis," Dr. William Porter discusses at some length the nature of the tubercular process. He gives a very good description of the affection.

Dr. Edward Montgomery contributes a lengthy paper, yet condensed, inasmuch as it covers so much ground, on "Bright's Disease." He makes four divisions, namely: 1. "Acute Desquamative Nephritis (Acute Parenchymatous Nephritis)"; 2. "Chronic Desquamative Nephritis (Chronic Parenchymatous Nephritis)"; 3. "The Red Granular Contracting Kidney (Cirrhosis)"; and 4. "The Lardaceous Kidney." The section of the article devoted to *treatment* is practical, and the entire description is very good, considering the author's idea of classification.

Dr. J. M. Richmond contributes a short article on "Battey's Operation—Extirpation of the Functionally Active Ovaries." He recommends the operation in certain cases, such as incurable occlusion of the vagina, etc.

"Precipitate and Precipitated Labors in their Relations to Injuries of the Soft Parts" is the title of a paper by Dr. S. S.

Todd. The author says that "during the latter weeks of gestation our patients should be instructed sedulously to avoid over-exertion, sudden physical and mental shocks, and everything else that might in any way tend to provoke untimely labor," to the end that all the soft parts may properly mature, and that obstructions and consequent sources of lacerations may be avoided.

Dr. James M. Pelot gives some useful hints on the employment of "The Mineral Waters in the Vicinity of Brownsville, Mo." The waters of Sweet Spring are especially lauded.

G. A. Moses, M. D., contributes an article on "Hystero-Neuroses, with Cases."

Charles Todd, M. D., contributes a short article on "Foreign Bodies in the External Ear."

Dr. S. S. Laws furnishes "A New Classification of the Cerebro-spinal Nerves."

Dr. R. M. Higgins contributes an article on "Animal Vaccination, with Especial Reference to its Failure on the Human Being, and Causes thereof." He explains the want of action which is frequently observed in bovine virus by supposing there is an error in propagating it in the animal.

Dr. W. A. Hardaway, in an article in which he discusses the question, "Is the Local Treatment of Eczema in Children Advisable?" advocates the cure of the eruption as soon as possible.

Dr. A. J. Steele makes a "Report on the Progress of Orthopœdic Surgery," in which is included some very useful hints on Pott's disease of the spine, and diseases of the hip and knee-joints.

Charles E. Michel writes on "Simple Conjunctivitis: its Treatment; the Use and Abuse of Astringent Collyria." He believes that astringents are usually irritating and harmful. A strong solution of opium and acetate of lead is recommended to be applied to the outside of the lids. In strumous cases large doses of muriated tincture of iron are to be taken an hour after each meal.

Dr. B. F. Records writes an elaborate article on "Scarlet Fever as observed during the Epidemic in Clay Co., Mo., during the Winter of 1874–'75, with Cases"; and Dr. R. E. Howlett reports an interesting case of "Extra-uterine Fœtation; Death of Fœtus in Eighth Month; Removal after Two Years." The patient recovered.

There are five papers included in the Massachusetts Society communications. The first is a practical paper, being the "Annual Discourse," entitled "Hints in Ethics and Hygiene," by Francis Minot, M. D.

The next article is contributed by Dr. Thomas Dwight, on "The Identification of the Human Skeleton—a Medico-legal Study." This article is the product of a vast amount of research, and was awarded the prize of the Massachusetts Medical Society for 1878.

Frederick C. Shattuck, M. D., writes an interesting article on "Floating Spleen." The author predicts a more hopeful future for splenotomy than is shown by existing statistics.

"Absence of Resonance in the Fifth Right Intercostal Space; Diagnostic of Pericardial Effusion," is the title of the succeeding paper, by T. M. Rotch, M. D.

"Reflex Symptoms in Hip Disease" completes the scientific portion of the volume, by E. H. Bradford, who reports some interesting cases in illustration of his theme.

The address of the President of the Connecticut Medical Society, Dr. R. Hubbard, is on "The Mutual Relations of the Public and the Regular Medical Profession." This is followed in the "Proceedings" by the "Report of the Committee on Matters of Professional Interest in the State." This occupies some one hundred and thirty-five pages, the larger portion of the volume. It includes reports from the several counties, with answers to questions propounded by the committee; reports of a considerable number of important and interesting cases; and "A Review of the Surgical Literature of the Year," by Dr. W. A. M. Wainwright, the last-named section being a condensed summary of the surgical innovations for the year.

A few special essays, and quite a large number of "Obituaries," complete the "Proceedings." Dr. L. S. Paddock contributes an essay on "The Etiology and Treatment of Puerperal Convulsions," a good article, although it contains no new suggestions.

Dr. S. H. Chapman contributes a practical essay on "Therapeutics of Throat and Ear Diseases."

Dr. E. P. Swasey read the closing paper on "The Relation of Uterine Contraction to Post Partum Hæmorrhage." He thinks that often when the physician supposes the contraction is complete it is only partial, and hæmorrhage supervenes as a consequence. He very justly remarks that "uterine contraction is the only condition compatible with a patient's safety when flooding."

The first two articles in the "Transactions of the Iowa Medical Society" are "Annual Addresses" of May 29, 1877, by Dr. H. C. Bulis, and January 30, 1878, by H. Ristine, M. D.

In a short article on "Headache," by Dr. E. H. Hagen, many of the conditions giving rise to that symptom are mentioned, especially diseases of the eye and ear. Dr. A. A. Noyes writes on "Cancer." Neither of these articles is systematic or novel.

Dr. J. G. House contributes a short article on "Puerperal Convulsions," in which the employment of the lancet, chloroform, and croton oil is recommended.

In a paper entitled "Matters of Professional Interest in Walpello County during 1876," Dr. S. B. Thrall gives a sketch of the diseases occurring there.

Dr. S. B. Chase writes on "The Thermometer in Diagnosis." Dr. William Watson writes on "Epidemic Spinal Meningitis in Dubuque in 1871 and 1872"; W. Watson, M. D., and B. M'Cluer, M. D., make a "Report of the Case of John W. Finley, M. D."; Walter Hay, M. D., makes a report and discussion of the "Autopsy of Dr. John W. Finley, of Dubuque"; and Asa Horr, M. D., writes on "Ovariotomy."

An "Extract from a Paper on Diphtheria," by J. Meek Lanning, M. D., is published, including the treatment which the author recommends. The prescriptions are incompletely written, and nothing new is given.

Dr. W. D. Middleton writes a very good article on "Pollution of Drinking Water."

Dr. A. A. Noyes reports a singular and seemingly incredible case of "Blindness Cured by the Sting of a Bee."

Dr. J. A. Blanchard contributes a paper on "Electricity and its Therapeutical Application"; Dr. W. W. Grant has one on "The Galvanic Cautery"; C. H. Rawson, M. D., writes on "Puerperal Convulsions"; Dr. D. W. Crouse contributes a good article on "Lacerated Perinæum"; and Dr. A. B. Brown writes one on "Typhoid Fever," which is very good considering its brevity.

The Medical Laws of Iowa, the Constitution, and By-laws of the Constitution, complete the volume. Viewing it as a whole, we must say we seldom meet with so many scientific articles together which possess so little merit.

The President of the Maryland Medical and Chirurgical Faculty, Dr. A. B. Arnold, makes "Homœopathy" the subject of his annual address.

Professor S. C. Chew delivered the "Address Commemorative of Nathan R. Smith," who died July 3, 1877; and the appropriate committee properly noticed the deaths of other members of the society.

Professor Ira Remsen delivered the "Annual Oration: Chemistry in its Relation to Medicine."

In the "Report of Section on Surgery," Dr. Allen P. Smith makes "A Report of Fifty-two Cases of Lithotomy." In one of these cases the patient was the subject of a remarkable deformity, similar to that described by Van Buren and Keyes,* namely, double bladder and penis.

Dr. A. Friedenwald contributes "Ophthalmological Notes"; Dr. John N. Monmonier makes an interesting "Report of Cases"; and Thomas R. Brown, M. D., writes on "Urethral Stricture."

In the "Report of Section on Practice of Medicine," Professor John S. Lynch makes mention of the value of "Sulphides in Diabetes"; also of "Apyretics and Antipyretics in Fever." In the latter section of the report the nature of heat production is discussed: the author is of the opinion that there is an inhibitory center located in the spinal cord, instead of in the brain, in the neighborhood of the pores.* We do not think the author has sufficient evidence in support of his opinion.

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* "Genito-Urinary Diseases."

P. C. Williams, M. D., contributes the "Section on Obstetrics and Gynæcology." He selects for his theme "The Use of Chloroform in Obstetrics," in which he advocates its employment on every slight pretext. One of the reasons given for its employment, "the immense relief bestowed upon the doctor," should in our opinion in no case be entertained. In cases requiring obstetrical operations, and in certain cases attended with great irritability, it is indicated; for the relief of a rigid os uteri, we believe chloral hydrate is more useful; and in many natural labors we believe patients are better off without any anæsthetic.

In the "Section on Materia Medica and Chemistry," Dr. J. E. Atkinson makes mention of *tayuya*, a reputed specific against syphilis; *curara*, as a cure for hydrophobia (three cases of cure being mentioned); and of *chrysophanic acid.* A plea is also made for the adoption of the metric system in weights and measures.

In the "Section on Physiology and Psychology," Professor F. Donaldson read a paper on "Spontaneous Generation." The author thoroughly discusses the question, and is "forced to the conclusion that life never appears independently of antecedent life." By applying this fact in practical medicine and surgery, much evil may be prevented.

The volume contains, in addition, several special papers. The first is a very good one by J. D. Thompson, M. D., on "General Paralysis of the Insane"; Dr. L. McLane Tiffany reports an interesting instance of "Removal of Naso-pharyngeal Polypus by Temporary Depression of Both Upper Jaws"; Dr. John Van Bibber read a paper on "The New Treatment of Chorea," in which he recommends rest and massage; Dr. Joseph A. White makes an interesting "Report of a Case of Exaphthalmos and Destruction of an Eye by a Tumor, with Notes on the Subsequent Development of the

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* For a thorough discussion of this question *vide* "The Lower Lectures. III. A Study of the Mechanism of Fever." By H. C. Wood, M. D.

Growth"; and Augustus F. Erich, M. D., reports "A Case of Double Vagina." The volume, as a whole, is quite interesting.

ART. II.—*A Practical Treatise on Surgical Diagnosis, designed as a Manual for Practitioners and Students.* By AMBROSE L. RANNEY, A. M., M. D., Adjunct Professor of Anatomy and Lecturer on Minor Surgery in the Medical Department of the University of New York. New York: William Wood & Co., 1879.

A GLANCE at the title-page of this volume might impress one with the idea that, unless of extraordinary excellence, it could have no *raison d'être.* The subject of diagnosis is treated pretty thoroughly in good surgical text-books, and several treatises devoted solely to it are in existence. But a glimpse at the pages of the book show at once that its arrangement is novel and striking; and that the features of differential diagnosis between the affections are expressed in an orderly and concise manner, and placed in vivid contrast by being arranged in parallel columns. The author has consulted a large number of standard and special treatises (which are included in a bibliographical table at the end of the book), and we are convinced from careful perusal that he has done his work accurately and thoroughly. The volume is divided into eight parts, Parts I., II., and III. being devoted to Diseases of the Blood-vessels, Joints, and Bones; Parts IV. and V. to Dislocations and Fractures; Parts VI., VII., and VIII. to Diseases of the Male Genitals, the Abdominal Cavity, and "Diseases of Tissues." The greater part of the last section is given to "Tumors," which are considered generally and also in their relation to different regions, the classification and nomenclature of Green's "Pathology and Morbid Anatomy" being adopted. Most of the surgical diseases of the female genitals are included in this section.

We certainly find in these tables more facts of value in diagnosis than in any other book we are acquainted with; and the graphic way, above mentioned, in which they are presented, makes the task of consulting the book an easy and interesting one. It is safe to say that the author has neglected to mention no important differential diagnosis within the range of his work. As an illustration of this we may say that in Part I. ("Diseases of the Blood-vessels") the diagnostic features of aneurism are contrasted with those of Erectile Tumors, Abscess and Tumor over an Artery, of Pulsatile Tumors of Bone, and Abdominal Aneurism is distinguished from Psoas Abscess, Abdominal Tumors, Pulsation of a Relaxed Aorta, and many painful abdominal diseases.

Another feature of the book is a summary at the beginning of each part of all the diseases which affect the tissues to which that part is devoted. A good classification of the diseases or injuries is given, followed by a very concise statement of their symptoms. This precedes the diagnostic tables, and makes an excellent introduction to them. The author uses frequently the tabular form of statement, and the tables of classification of hernia, aneurism, and fractures are especially complete and graphic.

The volume is presented in very good form by the publishers. The text is not infrequently marred by the reckless use of quotation marks, the most ordinary names of diseases (osteitis, periostitis, morbus coxarius), and such anatomical names as os magnum and dorsum ilii, and even simple adjectives like external and internal, when applied to aneurism, being loaded down by them. Another trifling blemish is the incorrect spelling of authors' names, of which the following are all that we have noticed: "De Costa," "Rokistansky," "Syme, I." "Van Beuren" and "Keys" (page 215.)

ART. III.—*Demonstrations of Anatomy; being a Guide to the Knowledge of the Human Body by Dissection.* By GEORGE VINER ELLIS, Emeritus Professor of Anatomy in University College, London. From the eighth and revised English edition. Philadelphia: Henry C. Lea, 1879.

WE do not know to what extent this manual for dissection has been adopted in this country, but have an impression that many teachers recommend cheaper, more popular, and less accurate treatises. The merit of this book, which its seven previous editions in England amply attest, lies in its *thorough-*

ness and truthfulness. It is written by an eminent practical anatomist, and is absolutely reliable. This edition is issued in very convenient octavo form, has plenty of good illustrations, and contains the most recent additions to our knowledge of the anatomy of the brain and spinal cord. It is, in our opinion, by far the best book on the subject in our language.

BOOKS AND PAMPHLETS RECEIVED.—Lectures on Syphilis of the Larynx. Delivered at the Hospital for Diseases of the Throat and Chest, London. Lesions of the Secondary and Intermediate Stages. By W. McNeill Whistler, M. D., M. R. C. P., Physician to the Hospital, etc. London: J. & A. Churchill. 1879. Pp. 88.

Elements of Modern Chemistry. By Adolph Wurtz, Member of the Institute, Honorary Dean and Professor of Chemistry of the Faculty of Medicine of Paris, Member Academy of Medicine, etc. Translated and Edited, with the approbation of the Author, from the Fourth French Edition, by W. H. Greene, M. D., formerly Demonstrator of Chemistry in Jefferson Medical College, Philadelphia, etc. With 132 Illustrations. Philadelphia: J. B. Lippincott & Co. 1879. Pp. 688. Price, $2.50.

Fistula, Hæmorrhoids, Painful Ulcer, Stricture, Prolapsus, and other Diseases of the Rectum: their Diagnosis and Treatment. By William Allingham, Fellow of the Royal College of Surgeons of England, Surgeon to St. Mark's Hospital for Fistula and other Diseases of the Rectum, etc. Third Edition. Partly rewritten. Philadelphia: Lindsay & Blakiston. 1879. Pp. 325. Price, $3.

A Guide to Therapeutics and Materia Medica. By Robert Farquharson, M. D., F. R. C. P., Lecturer on Materia Medica at St. Mary's Hospital Medical School. Edited, with Additions embracing the United States Pharmacopœia, by Frank Woodbury, M. D. Philadelphia: Henry C. Lea. 1879. Pp. 498. Price, $2.

Color-Blindness: its Dangers and its Detection. By B. Joy Jeffries, A. M., M. D. (Harvard), Ophthalmic Surgeon in Massachusetts Eye and Ear Infirmary, Carney Hospital, and New England Hospital for Women and Children, etc. Boston: Houghton, Osgood & Co. 1879. Pp. 312. Price, $2.

Further Contributions to the Treatment of Lupus. By Henry G. Piffard, M. D., Professor of Dermatology University Medical College, New York, Surgeon to Charity Hospital, etc. Read before the Medical Society of the State of New York, February 4, 1879. Reprinted from "The Medical Record," April 5, 1879.

De l'Utilité des Lavages Intra-Utérins Antiseptiques dans l'Infection Puerpérale. Par Joanny Rendu, Docteur en Médecine de la Faculté de

Paris, Ex-interne des Hôpitaux et du service de gynécologie de Lyon, etc. Paris: V. Adrien Delahaye et Cie. 1879.

Bibliotheca Dermatologica. Catalogue of Cutaneous Literature in the Library of Henry G. Piffard, M. D., Professor of Dermatology, University of the City of New York, etc. New York: Bradstreet Press, 279 Broadway. 1879. Pp. 87.

Transactions of the Obstetrical Society of London. Vol. xx. For the Year 1878. With a List of Officers, Fellows, etc. London: Longmans, Green & Co. 1879.

Long Life, and how to reach it. By J. G. Richardson, M. D., Professor of Hygiene in the University of Pennsylvania, etc. Philadelphia: Lindsay & Blakiston. 1879. Pp. 160. Price, 50 cents.

On the Application of Nascent Oxygen to the Disinfection and Deodorization of Wounds and Ulcerated Surfaces. By John Day, M. D. Geelong.

Transactions of the American Gynecological Society. Vol. iii. For the Year 1878. Boston: Houghton, Osgood & Co. 1879.

An Attempt to Explain the Curative Action of Certain Remedies in General Use. By John Day, M. D. Geelong.

Pendulum Leverage of the Obstetric Forceps. By Albert H. Smith, M. D. Reprint from Vol. iii., "Gynecological Transactions." 1879.

Reports on the Progress of Medicine.

CONTRIBUTED BY DRS. E. FRANKEL, G. R. CUTTER, AND C. CLEVELAND.

SURGERY.

Paraplegia a frigore.—Under this term, Dr. Lange understands a condition which sets in rapidly after one exposure to cold, and which runs the following course: At first, for one or two days, there is remarkable weakness of the lower extremities, followed later by irregularity in the fœcal and urinary evacuations. Before paresis sets in, there are vague pains in the limbs, in the back, sometimes anæsthesia in place of hyperæsthesia. General condition otherwise normal. In the course of a fortnight, provided the hygienic regimen has been proper, the paresis may disappear; but if there is a further impression of cold or bodily exertion, generally a series of morbid symptoms follows, paresis of the upper and lower extremities, and gradually, the usual results of myelitis. The author considers the disease to be a hyperæmia following peripheral ischæmia. Prognosis generally favorable. Treatment consists of local depletion, spinal douche and applications of tr. iodine; internally, iodide of potassium, nitrate of silver and ergotine.—"Hosp. Tidende." E. F.

Treatment of Pertussis by Inhalations of Carbolic Acid.—(Birch. Hirschfeld.—Allgem. Med. Centr. Zeit.—Med. Chir. Centrbl.). The method as first tried during the epidemic of whooping-cough in the Asylum for the Blind, at Dresden, in 1877, consisted not only in administering weak carbolic acid inhalations from time to time, but in continually keeping the patients in apartments carbolized with a spray of a twenty per cent. solution (otherwise well ventilated); the patients were let into the open air only for one hour daily during fair weather. This method was adopted because ten other children, isolated from the rest, were being treated on a different plan at the same time, and because single experiments, with carbolic inhalations according to Burchard's method, had given no striking results. It is to be remarked that no signs of carbolic acid poisoning showed themselves in any of these patients; on the contrary, they enjoyed very good health. For the first two or three days of treatment, almost no decrease in the number and intensity of the attacks could be established; then, in an exceptional case, improvement showed itself, then in cases which from the first had been severe; as a rule, the convulsive stage could be declared ended at the end of the first week; in only a few cases, which were not treated from the beginning, the convulsive stage extended into the second week; a slight, bronchial catarrh still continued for several weeks. It is noteworthy that when the spray was omitted on the fourth day, all the patients had severer and more frequent attacks, which moderated when the spray was again commenced. The author observes that this treatment has proved efficacious not only in children of ten or twelve years of age, but also in those one year old, as evidence of which he has 18 cases. In one case, two children, respectively one and two years of age, during sleep were left in an apartment free from carbolic acid vapor; but even then the duration of the very severe convulsive stage lasted only nine and ten days respectively.

Subcutaneous Injections of Ether and Alcohol in Post-Partum Anæmia.—In four cases of anæmia post-partum, Chautreuil injected ether and cognac. As much as four syringefuls were injected at one time. This method may be of advantage in cases where all stimulants given by the mouth are immediately vomited.—"Lyon Méd." E. F.

THEORY AND PRACTICE.

Relative Temperature in Febrile Diseases.—Dr. H. Wegschneider has made some investigations, in Senator's clinic, of the relative temperature of symmetrical localities (the interval between the first and second toes and the axillæ), and gives the following results: The internal temperature, as measured in the axillæ, does not necessarily keep pace with the temperature measured in the one or the other portion of the surface. Even the completely symmetrical places, as mentioned above, for example, do not show any regular course of temperature; not only that a rise or fall shows itself irregularly in the two sides, but it also occurs, though seldom, that there is a rise on one side, while on the other there is no change or a fall. During fever there is found in one and the same place much greater variations than in a non-febrile condition of the same individual, that is, a remarkably low temperature, such as is rarely found without fever, in people, for example, who suffer from cold feet. The difference between one place or other of the skin and the axillæ is therefore frequently greater than in a febrile condition, which goes to show that the cutaneous capillaries during fever are in an abnormal condition of innervation, and also shows that one should not expect to find any constant relation between the internal temperature and that of the skin. With regard to the relation of temperature in both axillæ in one-sided affections of the breast, Wegschneider made measurements to test the correctness of the French author's assertion that in pneumonia or pleurisy the temperature of the affected side is always higher than that of the other side. In two cases of pneumonia, and eight of pleurisy, it was found in only one of pleurisy, so long as the fever lasted, that there was a difference of half a degree in favor of the affected side. In one case of double pleurisy the temperature was three tenths of a degree lower on the side of the greatest exudation. Otherwise the difference was so slight between the two axillæ as to scarcely exceed that which occurs in persons free from fever.—" Virch. Arch. and Hospitals-tidende," No. 26. G. R. C.

THERAPEUTICS.

Microscopic Examination of Triturated Metallic and other Hard Substances (" New Remedies," *March*, 1879).—The homœopathic school has always claimed that the divisibility of material substances with some inert substance, such as sugar of milk, was unlimited. Dr. C. Wesselhöft, a homœopath of Boston, has published a paper on the subject, in which he gives results which are totally at variance with the theory.

He finds that the sugar of milk is the chief obstacle to the examination of triturations. It is difficult of removal, and often occasions doubt whether a fragment of milk sugar or metallic speck is under the microscope. Careful study will enable one to detect it always when present. In examining a trituration of heavy metallic substances, the milk sugar may be got rid of by washing and decanting. A magnifying power of 100 is sufficient to recognize the minutest particles which may be produced by trituration, though higher powers are necessary for making measurements and identifying substances. This would seem surprising in view of the claim that continued trituration results in almost unlimited division.

Wood-charcoal was first examined. The smallest particle of the first centesimal was recognized, by a power of 100 diameters, and had a diameter of about $\frac{1}{100}$ in. Of the third centesimal a large number of samples had to be examined before a single particle of carbon could be detected. After repeated and careful search it was proved that carbon particles were present, perhaps one or two in the field of vision. None smaller than $\frac{1}{3000}$ mm. in diameter were found. A drachm of wood-charcoal alone was triturated for three quarters of an hour. The smallest particle measured $\frac{1}{3000}$ mm.

Of gold leaf the third trituration was found to contain no particle smaller than $\frac{1}{50}$ mm. Even in the sixth trituration no particle smaller than $\frac{1}{400}$ mm. was found. Of precipitated gold, which admits of higher division, in the first and second centesimal, the smallest particle varied equally between $\frac{1}{500}$ and $\frac{1}{1800}$ mm.

The trituration of iron and of silica exhibited the same characteristics.

.Of precipitated copper the smallest particle measured $\frac{1}{1500}$ mm. It can not be objected that some particles may have been triturated so finely as to be undiscoverable, because examinations were made after every trituration, and the particles were found of the same size and same average number.

Lead is capable of further division. The smallest particle measured

$\frac{1}{8000}$. But in this the limit of divisibility was reached in the first centesimal.

Mercury, triturated with milk-sugar, even for a long time still remains divided in comparatively large globules, but with Canada balsam the globules become very much smaller.

The conclusion is that metallic and other insoluble substances can not be diminished in size by constant trituration beyond a certain limit. The limit seems to depend upon the proportion of milk-sugar; the smaller the quantity of the latter used, the further may the division be carried. It has been believed that the minute division in which these bodies must be in the higher trituration, rendered them completely soluble in alcohol or water. This theory must now be given up. The author himself concludes that no particles of the original substance could be present in any trituration higher than the third centesimal. Hence it is impossible to make dilution from the higher trituration. The author further states that he obtained from sixteen healthy persons, without any medicinal agent, nine hundred and nineteen different symptoms, or provings, as they would have been called. He advocates the giving up of all "provings" made with such dilutions as the twelfth and above, as there can be no material substance present in them. C. C.

Miscellany.

Bigelow on Lister.—The "Boston Medical and Surgical Journal" of June 5th contains the first of two lectures by Professor Henry J. Bigelow, on the modern art of promoting the repair of tissue. He admits boldly that, after two years spent in devising new antiseptic details, he has come back at last to something very like Lister's method as the most convenient and efficient. He says, with admirable candor: "I doubt whether any surgeon approaches for the first time certain machinery of the antiseptic method without distaste. It flatters neither the vanity nor the scientific sense to exorcise an invisible enemy with something very like a censer. But after two years' experience, I have accepted the new doctrine with most of its details. I have learned that, whatever be his method, the duty of the surgeon is to act as if all the particles made visible by a sunbeam were noxious, falling like snowflakes during every operation and every dressing, seeking to insinuate themselves into the wound at every crevice. His aim should be to destroy the actual intruders, and effectually to exclude their thronging companions. While partial measures facilitate repair, and a pure air promotes it, there can be no question that the average result is signally improved by a thorough antiseptic dressing, and that the worst cases often thrive under it in a way hitherto wholly unexampled."

New Work on Skin Diseases.—We have received Parts I. and II. of "Photographic Illustrations of Skin Diseases," by Dr. George Henry Fox, including the following diseases: Comedo, Acne vulgaris, Lepra tuberosa, Elephantiasis, Keloid, Rosacea, Psoriasis nummulata, and Ichthyosis simplex. The tinted photographs illustrating these forms of skin disease are very fine, and as truthful representations they can hardly be surpassed. They have been prepared under the personal supervision of Dr. Fox, and are the result of much patient labor and many unsatisfactory experiments. The photographs are accompanied by a brief but remarkably clear and comprehensive description of each disease represented, with notes as to the treatment the author has found most efficient. The work is to be complete in twelve parts, containing forty-eight plates, all taken from life. The price of each part is two dollars. The work is issued by E. B. Treat, and reflects great credit on both publisher and author.

The Warren Triennial Prize.—This prize, of four hundred dollars, will be awarded next year to the best essay on Original Observations in Physiology, Surgery, or Pathological Anatomy. The essays should be forwarded before February 1, 1880, to the resident physician of the Massachusetts General Hospital.

Appointments, Honors, etc.—Dr. A. A. SMITH has been appointed Professor of Materia Medica in Bellevue Hospital Medical College, in place of Dr. Polk, resigned; and Dr. Joseph W. Howe has been appointed Professor of Clinical Surgery in the same school.

The Report on Laryngology.—Our readers will miss the usual quarterly Report on Laryngology, which, in consequence of the illness of Dr. Lefferts last month, is postponed to the August number.

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department, United States Army, from May 14 to June 13, 1879.

PAGE, CHARLES, Major and Surgeon.—Assigned to duty as Post-Surgeon at Fort Monroe, Va. S. O. 114, A. G. O., May 14, 1879.

MOORE, JOHN, Major and Surgeon.—When relieved by Surgeon Joseph R. Smith, to proceed to New York City and report by letter his arrival to Surgeon-General. S. O. 114, C. S., A. G. O.

SMITH, JOSEPH R., Major and Surgeon.—Relieved from duty at Fort Monroe, Va., and assigned to duty as Medical Director, Department of Texas. S. O. 114, C. S., A. G. O.

TOWN, F. L., Major and Surgeon.—Assigned to duty at Fort Walla Walla, W. T. S. O. 49, Department of the Columbia, May 1, 1879.

STORROW, S. A., Major and Surgeon.—Assigned to duty as Post-Surgeon at Fort D. A. Russell, Wyoming Ter., relieving Surgeon J. R. Gibson. S. O. 45, Department of the Platte, May 26, 1879.

WOLVERTON, W. D., Major and Surgeon.—Relieved from duty in Department of Dakota, to proceed to New York City and report by letter his arrival to Surgeon-General. S. O. 114, C. S., A. G. O.

GIBSON, J. R., Major and Surgeon.—Relieved from duty in Department of the Platte, to proceed to New York City, and report by letter his arrival to Surgeon-General. S. O. 114, C. S., A. G. O.

O'REILLY, R. M., Captain and Assistant Surgeon.—Granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 84, Department of the South, May 28, 1879.

DE WITT, C., Captain and Assistant Surgeon.—Assigned to duty as Post-Surgeon at Fort Sidney, Nebraska, relieving Assistant Surgeon C. E. Munn. S. O. 45, C. S., Department of the Platte.

CARVALLO, C., Captain and Assistant Surgeon.—Relieved from duty in Department of the Missouri, to proceed to Washington, D. C., and report by letter his arrival to Surgeon-General. S. O. 114, C. S., A. C. O.

MOFFATT, P., Captain and Assistant Surgeon.—Relieved from duty in Department of the East, and ordered to the Department of the Columbia. S. O. 114, C. S., A. G. O.

CLEARY, P. J. A., Captain and Assistant Surgeon.—Relieved from duty in Department of the Missouri, to proceed to New York City, and report to Army Medical Examining Board for examination for promotion, and on its conclusion, by letter to Surgeon-General. S. O. 114, C. S., A. G. O.

MUNN, C., Captain and Assistant Surgeon.—Relieved from duty in Department of the Platte, to proceed to Boston, Mass., and report by letter his arrival to Surgeon-General. S. O. 114, C. S., A. G. O.

DICKSON, J. M., Captain and Assistant Surgeon.—Relieved from duty at Fort Klamath, and assigned to duty at Fort Stevens, Oregon. S. O. 47, Department of the Columbia, April 29, 1879.

Ewen, C., Captain and Assistant Surgeon.—Relieved from duty in Department of the East and ordered to Department of the Missouri. S. O. 114, C. S., A. G. O. Assigned to duty at Fort Elliott, Texas. S. O. 107, Department of the Missouri, June 2, 1879.

Paulding, H. O., First Lieutenant and Assistant Surgeon.—Relieved from duty in Department of Dakota, to proceed to Washington, D. C., and report by letter his arrival to Surgeon-General. S. O. 114, C. S., A. G. O.

Adair, G. W., First Lieutenant and Assistant Surgeon.—Relieved from duty in Department of Texas, to proceed to Utica, Mich., and report by letter his arrival to the Surgeon-General. S. O. 114, C. S., A. G. O.

Semig, B. G., First Lieutenant and Assistant Surgeon.—Relieved from duty in Department of the South, and assigned to duty in Department of the Platte. S. O. 114, C. S., A. G. O.

Wilcox, T. E., First Lieutenant and Assistant Surgeon.—At expiration of his present leave of absence ordered to the Department of the Columbia for assignment to duty. S. O. 114, C. S., A. G. O.

Turrill, H. S., First Lieutenant and Assistant Surgeon.--Relieved from duty in Department of Texas, to proceed to Boston, Mass., and report by letter his arrival to the Surgeon-General. S. O. 114, C. S., A. G. O.

Biart, V., First Lieutenant and Assistant Surgeon.—His sick leave extended one month, with permission to leave the Department of the Missouri. S. O. 137, A. G. O., June 11, 1879.

La Garde, L. A., First Lieutenant and Assistant Surgeon.—Relieved from duty in Department of the East, and ordered to the Department of the Missouri. S. O. 114, C. S., A. G. O. Assigned to duty at Cantonment on North Fork of the Canadian River, Indian T. S. O. 101, Department of the Missouri, May 23, 1879.

Kinsman, J. H., Captain and Assistant Surgeon.—Granted leave of absence from March 21, 1879, to September 21, 1879. His resignation accepted by the President, to take effect September 21, 1879. S. O. 117, A. G. O., May 17, 1879.

Obituary.

Dr. Adolphe Gubler, Professor of Materia Medica and Therapeutics in the Paris Faculty, died at Toulon, April 20th, in his fifty-eighth year. He was a man of extensive attainments, and for many years a very popular teacher.

Obituary notices of the late Dr. John T. Darby, Dr. Maury, and others are unavoidably postponed to our next issue.

READING NOTICES.

THE APOLLINARIS QUESTION.

We have received copies of reports by Professors Hoffman, Berlin, Kekule, Frankland, and Odling, detailing the results of recent visits paid by them to the Apollinaris Brunnen, Ahrweiler, Rhenish Prussia, for the purpose of examining and reporting upon the springs, the method of bottling, and the Apollinaris Water as bottled and sold to the public. These names are those (as our readers will recognize) of the most eminent living chemists in Europe, each of them being at the head of great Government establishments. Hoffman and Frankland are also the two chief authorities on Water Analysis, and Odling, besides his appointment as analyst for the British rivers commission and water supply commissioner of the English Government, was the British chemical judge at the Centennial Exhibition. Their reports are conclusive. Each for himself examined the spring, the bottling-works, the pipes leading thereto, the gas issuing from the spring, etc.; and Odling adds a detailed analysis to his report. The testimony is also given of Professor Mohr and Professor Bochoff, after minutely detailing the complete nature of their investigation, they all express the opinion that the Apollinaris Water of commerce is the natural mineral water of the Brunnen, bottled according to the rules of science, and containing its own natural gas in the proportion in which it exists in nature in the spring. An independent official investigation, ordered by the Treasury Department at Washington, has confirmed these results; and thus the charges to the contrary which have been extensively circulated by certain interested parties are effectually disposed of.

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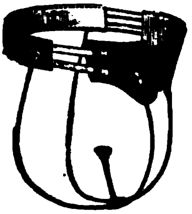

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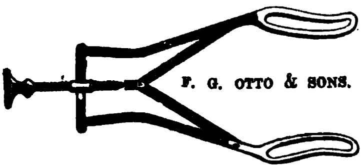
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[Extract from Proceedings of the Richmond Academy of Medicine, October 15, 1878, taken from the "Virginia Medical Monthly" of December, 1878.]

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ALBUMINURIA OF SCARLET FEVER.

Communication to the "Virginia Medical Monthly" for November, 1878, *by* Dr. C. W. P. Brock, *of Richmond, Va., a Member of the State Medical Society.*

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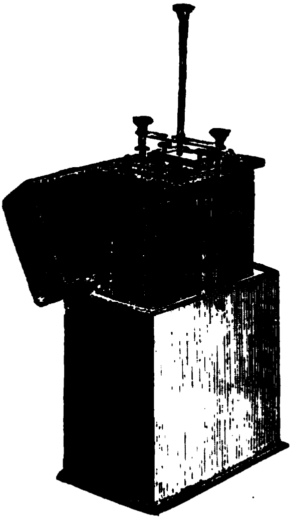

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MEDICAL JOURNAL:

A MONTHLY RECORD OF

MEDICINE AND THE COLLATERAL SCIENCES.

VOL. XXX.] AUGUST, 1879. [No. 2.

Original Communications.

ART. I.—"*The Physiological and Therapeutical Effects of Salicylic Acid and its Compounds.*"* By WILLIAM OLIVER MOORE, M. D., Assistant Surgeon, New York Eye and Ear Infirmary.

(*Concluded.*)

The trouble, however, is not in the drug used but in the manner of employment. This same objection might be raised against other methods of treatment if improperly used. If the drug is discontinued immediately on the subsidence of pain, it is no wonder if a relapse occurs; and we are quite sure that, in the majority of cases where the drug is continued for several days after all symptoms have disappeared, there will be no immediate relapse. The following statistical facts need no special comment.

E. H. Jacobs,† M. D., of Leeds, England, in a paper read before the forty-fifth annual meeting of the British Medical Association in 1877, reports the following facts in reference to one hundred cases of rheumatism treated at the Leeds Infirmary. Sixty-three did well; average duration of symptoms, 2·9 days; average duration in hospital, 12·9 days.

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* Being the Joseph Mather Smith Prize Essay, awarded by the College of Physicians and Surgeons, New York, 1879.

† "British Med. Jour.," Aug. 25, 1877.

Thirty did moderately well; average duration of symptoms 11 days; average duration in hospital, 35 days. Two were uninfluenced by the drug. Five died from complications, many having had repeated attacks. Three contracted pericarditis while under treatment; 6·6 per cent. of cardiac cases under treatment. Dr. Jacobs used salicylic acid in thirty-grain doses every four hours. Dr. Brown,[*] of Boston, reports the statistics of one hundred and six cases of acute rheumatism, treated at the Boston City Hospital, by salicylic acid. Average time to amelioration of symptoms, 1·46 day; average time to complete cessation of pain, 2·35 days; average time salicylic acid was taken, 6·22 days; average amount of salicylic acid taken by each, 343 grains; number of cardiac affections occurring while under treatment, 4·76 per cent.; number of cardiac affections occurring under *alkaline* treatment in same hospital, reported a short time previously, 13·22 per cent. Dr. Cavafy [†] reports, as the result of experience with this drug in St. George's Hospital, London, that pain was relieved, on the average, in two days; that average duration in hospital was six days. Dr. Alonzo Clark [‡] reports the result obtained in eleven cases treated at Bellevue Hospital. These cases were treated with the following mixture: ℞. Acid. salicyl. ʒiij, soda bicarb. ʒij, glycerinæ, aquæ, āā ℥ij; in reality a salicylate of soda, given in tablespoonful doses every two hours at the commencement. He found that the average time in which pain was relieved was $3\frac{6}{11}$ days. The average time they remained in hospital was $12\frac{8}{11}$ days. Dr. Miller,[§] of St. Peter's Hospital, Brooklyn, reports the following experience in twenty-two cases: Average time before pain and temperature reduced, 4 days. Average duration in hospital, 14 days.

For the sake of showing the rapidity with which salicylic acid cures rheumatism, we have collected three hundred and five cases; and, for contrast, will place them opposite a nearly similar number of cases, treated by various other methods, viz., alkaline, lemon juice, etc.:

---

[*] "Boston City Hospital Reports" (new series), 1877.

[†] "St. George's Hospital Reports," vol. viii., p. 198.

[‡] "Medical Record," vol. xi.

[§] "New York Medical Record," vol. xiii.

METHOD.	No.	Average Duration of Pain.	Average Duration in Hospital.
ALKALINE:			
Lemon juice, etc......	316	17·20 days.	22·60 days.
SODA SALICYLATE:			
Salicylic acid.........	305	2·92 days.	9·58 days.

This table, it seems to us, leaves no question as to the superiority of the salicylate treatment. In passing, we will say, that in 1876 Dr. Maclagan * called attention to the beneficial action of *salicin* in acute rheumatism, he supposing that rheumatism has a malarial origin. He used this drug, prior to the introduction of salicylic acid into Great Britain, as an antirheumatic. Salicin has no advantages over the acid or its soda salts, and we therefore speak no further of it. What we have thus said in detail, in reference to salicylic acid in rheumatism, may be summed up briefly as follows:

1. That its most beneficial effects are manifested in the more acute cases. In sub-acute cases there is less, and in chronic cases not any advantage from its use.
2. That it should be given in doses of not less than twenty grains, every two hours, in an adult.
3. That its use should not abruptly terminate on the subsidence of the pain and fever, but the interval between the doses should be more and more prolonged.
4. That, by its employment, "rheumatic fever" may, in a majority of cases, be made a disease of hours, or at most of days, instead of months as it formerly was.
5. That, by the brevity of the febrile condition, the chances of cardiac complication occurring are immensely diminished.

TYPHOID FEVER.—Next to acute rheumatism, typhoid fever claims our attention, as these drugs have been largely used in this fever, more especially in Germany.

One of the first reports of its use in this disease we find given by Dr. Ewald,* in a paper read before the Medical Society of Berlin, in 1875. The patients were in Dr. Frerich's wards, and were treated by salicylate of soda. It was given either in single doses of forty or seventy-seven grains, or in daily quantities of the latter amount, divided into doses every two hours. It was only with the first form that striking results were obtained, the temperature falling as much as 7·2° F. in ten hours. Of one hundred cases of typhoid, during the height of the disease, the afternoon temperature in eighty was reduced below that of the morning by a single dose given at noon. Symptoms of intoxication, such as noises in the ears, faintness, and sight hallucinations, were seen in only two cases, and passed off rapidly. Dr. Ewald regards salicylate of soda as equal to all other antiseptics, but warns against its incautious use in weak individuals. Dr. Goltdammer confirms the opinion of the above, but cannot convince himself that the course of the fever is changed, although the temperature is diminished. Profuse perspiration has been frequently noticed shortly after the administration of the drug. (Moeli, Buss, Ewald.) In four cases treated by Dr. Moeli, sickness and vomiting compelled him to use the salt solution as an enema, after which a distinct fall of temperature followed, though not so marked as when given by the mouth. Reiss † has made a large number of observations; he gave the salicylate of soda in two hundred and sixty cases. Whenever the temperature rose above 39° C., seventy-seven grains were given in one dose. Occasionally the first dose acted only slightly; the effect, however, was always decidedly marked in the later doses. In a case of average severity, one dose was generally sufficient in the twenty-four hours, and from the middle of the second week only once in forty-eight hours. After this time the temperature rarely rose above 38° C., so that, in all, eight to ten doses only were required to keep the temperature almost normal. The effect of cold baths was found to be more marked and more persistent than when used independently. The salcylate treatment appeared to exert a distinct influence in decreasing the length of the disease, the average length of the febrile period, in one hundred and sixty-four cases treated early and ending favorably, being 13·1 days. This may be considered as a good result, as the malignant character of the epidemic was great, the total mortality of the two hundred and sixty cases being sixty-three, or 24·2 per cent. Dr. Fisher,* of the Dresden Hospital, while admitting the antipyretic action of the drug, considers quinine as far superior. Professor Schröder,† of St. Petersburg, reports the result of his experience in a military hospital. One hundred and sixty cases of typhoid were treated by the salicylate of soda. Of these, thirty-one were fatal, the mortality being 19·4 per cent., the mortality of the preceding two hundred and eleven cases, treated by other methods, having been 14·7 per cent. The causes of death in the salicylic cases were, in four, perforation; in five, pneumonia; and, in the remainder, œdema glottidis, meningitis, and parotitis. It reduced the fever, without question, but he observed no favorable influence on the course of the disease. Schröder concludes that the treatment is inferior to that by cold baths.

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* "Lancet," March 4, 11, 1876.

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* "Berliner klin. Woch.," Aug. 18, 1875.

† "Berliner klin. Woch.," Nos. 50, 51, 1875.

This opinion is not held, however, by Jahn, who published the results of his experience in three typhoid epidemics, by three different methods.

The first class, of thirty-nine patients, were treated by the quinine and "cold water" method; of these nine died, six from the intensity of the disease. The average duration in hospital was sixty-six days; complications occurred seven times; cerebral symptoms, twenty-five times, etc.

The second class of sixty-three were treated with quinine and energetic cold baths. Of these six died, of which five were from the intensity of the disease. Average duration in hospital was fifty-three days; complications were noticed in seven cases; cerebral symptoms in seven, severe intestinal symptoms in twenty-one.

The third class of thirty-five patients were treated by the salicylates (a drachm and a half of salicylic acid, dissolved in water with an equal quantity of bicarbonate of soda). Of these only three died, all having double pneumonia. Average duration of treatment was thirty-seven days; complications were observed twenty-four times; cerebral symptoms were present in no case. This observer believes that in large doses the medicine not only acts as an antipyretic but has also a healing effect on the typhoid process. Dr. Murchison reported to the Clinical Society a case of typhoid fever in which unpleasant effects were produced, causing violent delirium, ceasing when the medicine was omitted; there were also albuminuria and almost total suppression of urine, both passing off when the drug was discontinued. There is no doubt that in this case the dose was entirely too large, as he gave three hundred and sixty grains daily, three times the quantity used by Jahn. It is evident that, in typhoid, doses can not be borne which do good in acute rheumatism, so that we must not argue from the ill effects of the drug in the above case as to the possible beneficial effects of its use in smaller doses.

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* "Deutsche Zeitsch. f. prakt. Med.," No. 18, 1875.

† "Lancet," Dec. 8, 1871.

In France, Dr. Gueneau de Mussy, having used it in twenty-seven cases of typhoid without having any deaths, gives a favorable report. He used it in small doses, and believes that it does no harm. On the other hand, M. Sée believes it to be of little service, and that doses causing an antiseptic influence on the intestine would produce irritation. This is simply a theoretical objection. M. Oulmont thinks favorably of the salicylate treatment.

The various opinions above expressed, and the contrast of the observations made by equally able men, are so great as to make it probable that the epidemics differed very much in severity and character, or else that the drug was either used in too small quantities or was of an impure nature. We have not seen any reports of its use in this country in this particular disease.

We have collected eight hundred cases, in which the mortality was 11 per cent., where the antipyretic treatment was carried out by means of quinine and cold baths. And we think that three hundred cases which we have collected, treated by salicylates alone, will compare very favorably with the above, the mortality being 11½ per cent. This is a great improvement over the expectant or symptomatic treatment, in which the mortality in 1,718 cases was 27 per cent.

We doubt not that, if the cold water treatment combined with the salicylate method were adopted, the percentage of mortality would come down to 10 or even 8 per cent.

What we have said at some length may be briefly summed up as follows:

1. Salicylic acid and its salts have a decidedly beneficial effect in typhoid fever, in reducing the temperature and thereby decreasing the mortality.
2. That its tendency is to shorten the duration of the disease by its antiseptic properties.
3. That the salicylate treatment is equal to any other antipyretic form of medication.
4. That there is every reason to suppose that the salicylate, combined with the cold water treatment, would excel all other methods.
5. That a large dose of one drachm of salicylate of soda acts better given at once than divided doses. Such a dose is sufficient for twenty-four hours.

DIPHTHERIA.—Numerous trials have been made with salicylic acid and its salts in this much dreaded disease. Dr. Fontheim * reports the results of thirty-one cases. None of the cases were complicated with inflammation of the kidneys. In one case there was paralysis of the soft palate. In the severe cases he removed the membrane by means of a sponge soaked in the solution, and in addition gave a teaspoonful of the solution every hour. None of his cases terminated fatally. The pure acid was used in a vinous solution. Dr. W. Wagner † reports that he has employed this remedy with satisfactory results in fifteen cases; for older children it was employed as a gargle; for younger children unable to gargle, it was given internally. The solution consisted of the pure acid in water and alcohol. In all of the fifteen cases it was well borne.

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* "Memorabilien," xii., 1874.

† "Allgemeine Med. Central Zeitung," No. 14, 1875.

Dr. Hanow * reports wonderful results in six cases, observing that after the third or fourth dose the membrane begins to be cast off so rapidly that masses are vomited up. For adults, he gives the acid in a phosphate of soda solution, one and one half grain of the acid to the ounce of water, given internally.

Theodor Schuler (Cüstim) † reports the result of treatment in seventy-nine cases, employing in forty-one cases chlorate of potash, with a mortality of six. In twenty-three cases carbolic acid was used, with a mortality of one. In twenty-three cases salicylic acid was used, with a mortality of seven cases. In the chlorate of potash cases the larynx was affected in three, in the carbolic cases four, in the salicylate cases seven. He employed the salicylic acid in the same method as Wagner and Fontheim, yet the results are markedly different. Letzerich, ‡ as a result of his experiments, believes the acid a powerful anti-diphtheritic agent.

Dr. Van Wagenen, of Newark, N. J., was one of the first to use this drug in diphtheria in this section of the United States, having prescribed it inMarch, 1875, with very favorable result. Dr. C. E. Billington, in his report on diphtheria read before the Academy of Medicine, 1877, mentions its use, giving it in the form of a spray or gargle. It has been used only to a limited extent at the Fever Hospital. Doubtless many physicians have employed it in private practice, yet the journals have contained little in reference to it. The discrepancies in statements made by observers are largely due to the peculiarities of the epidemics in which the drug was employed. Many cases in mild epidemics recover without any treatment, while severe or malignant cases succumb under the best medical care. In brief:

Salicylic acid is a valuable agent in the treatment of diphtheria, as it not only acts as an antiseptic, but also favors the exfoliation of the membrane from the throat by increasing the secretions behind it, thus tearing it off.

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* "Berliner klin. Woch.," No. 20, 1875.

† "Berliner klin. Woch.," No. 40, 1875.

‡ "Central. f. die Chirurgie," No. 3, 1876.

It may be used either as a gargle or internally, or in both ways. We would particularly commend the use of it in spray, using a solution of the acid in alcohol and water, three grains to the ounce of fluid. The internal use of the salicylate of soda should also be insisted upon. We predict for it brilliant results.

In the Exanthemata. — *Smallpox.* — Mr. E. Prideaux,* late Resident Medical Officer of the Derby Smallpox Hospital, reports the result of his experience in twenty-nine cases. All of the patients recovered, without the secondary fever and pitting. Four were unvaccinated, eight confluent, and one hæmorrhagic. He used the salicylate of soda internally in moderate doses. This is the only report we have seen of its action in this disease.

Scarlatina.—In this disease it has been employed by a few practitioners in Germany and in this country. It is particularly useful in its antipyretic action, as many die from the intensity of the animal heat. A case under treatment at present well illustrates its beneficial action, the temperature being reduced from 105° to 100° F. in four hours by a small dose of ten grains, in a child two years old.

Diabetes Mellitus.—Some few years since carbolic acid was suggested for use in this disease; the results obtained were favorable in many cases. The similarity of salicylic acid, in its action in the body, to the above named drug has led to its being used in diabetes mellitus.

The first account we have seen of its use in this country is of a case † treated at the Columbia Hospital Dispensary, Boston, 1875, as follows:

Colored woman, æt. forty-five, who had been the subject of the disease for three years; she had double cataract as a result of it. The urine contained fourteen per cent. of sugar, as determined by Fehling's test. Various methods of treatment had been tried without improvement. One year previous to report she was treated by carbolic acid, followed by marked improvement for a while, the sugar being reduced to seven per cent., the diet in the mean while being regulated. As no further improvement took place, four months prior to report, salicylic acid was substituted, given in pills containing ten grains each three times a day. Ten days after the amount of urine passed was very much reduced, and all traces of sugar had disappeared.

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* "Medical Exam.," May 31, 1877, p. 429.

† "Boston Medical Journal," September, 1875.

Dr. Wm. Ebstein * reports two cases, treated at Gottingen.

Case 1, æt. twenty-five. First came under treatment December 1875, then voiding daily 5,775 grammes of urine of specific gravity of 1·033, and containing 259 grammes of sugar. Salicylate of soda was given internally, at first in small doses, then gradually increased, till February 18, 1876, the patient took 75 grains of the soda daily in divided doses. On the 29th of February, only the slightest trace of sugar could be found, and the urine voided was normal in quantity.

Case 2, æt. thirty-five, had been treated by various methods without good result. Was put upon the salicylate treatment December 21, 1875, then voiding 3,500 grammes of urine, containing 140 grammes of sugar. The treatment continued till March 23d, when only 880 grammes of urine and 13 grammes of sugar were passed.

Gerling, of Elmshorn, reports two cases treated by means of salicylate of soda given in thirty to forty grains three times daily, with marked diminution of sugar. In one case vertigo was produced, and paresis of the accommodation.

Von Brinken † also reports its favorable action.

Ryba and Plumert,‡ in investigating the effect of this drug in this disease, have arrived at the following conclusions:

1. That salicylate of soda given daily in doses of 120 grains determines a decided diminution in the sugar excreted.

2. That considerable differences are observed, according to the class of cases. In recent cases the sugar can be made to disappear completely, and does not reappear immediately after

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* "Berliner klin. Woch.," No. 24, 1876.

† "Med.-Chir. Rundschau," May, 1878.

‡ "Präger med. Woch.," Nos. 19, 20, 21, 1877. Translated by Dr. G. R. Cutter.

the discontinuance of the medicine. In cases of longer duration the effectiveness of the remedy is also apparent, though the sugar does not entirely disappear. Lastly in cases of many years standing, with severe diabetic symptoms, no good result was obtained, at least in the doses used by them.

3. Diminution of the saccharine element is more remarkable by the greatest restriction of hydro-carbons in the diet.

4. Diminution of quantity of urine is parallel with diminution of sugar. All the symptoms are influenced favorably.

5. In two cases the quantity of sugar and urine was increased for a short time, and was followed by progressive diminution of sugar excreted, more so than when the treatment was indifferent. The cases we have cited well accord with the above results, except that we found the case of over three years' standing, with diabetic cataracts, markedly improved, with entire absence of sugar in urine. We have thus another powerful remedy in our hands to combat this disease. As to the *modus operandi* of the drug in diabetes, much has to be learned.

IN MISCELLANEOUS DISEASES.—*Dilatation of the stomach.*—Dr. Russell,* of Birmingham, reports a case of this disease in which 8-grain doses were given three times daily with marked improvement of symptoms; the dilatation was reduced, and vomiting stopped, though sarcinæ were still present.

Mycosis Œsophagi.—Dr. Letzerich † describes the case of a child sixteen months old, suffering from difficulty of deglutition, irritation, dyspepsia, and distention of the stomach, with vomiting of muco-purulent masses of flattened epithelium, covered with peculiar microscopic fungi. An examination of the wall paper revealed the cause of the disease, it having a dust-like deposit on it. The fungi on the paper were identical with those found in the vomited matter. In creeping along the wall the child had pulled off small pieces and swallowed them. The treatment consisted in the administration of salicylate of soda in barley-water; the case recovered in 11 days.

* "Br. Med. Jour.," October, 1876.

† "Archiv. f. exper. Path. u. Physiol.," 1877.

Yellow Fever.—Dr. Hartwig Bünz,* of Savannah, in a letter written to Professor Heyden, of Dresden, gives the following facts:

Being called in August, 1876, to an epidemic of this disease, after trying the usual routine of medicines without effect, and finding that the fever was of an intermittent type, he resolved to try salicylic acid. He gave adults a dose of one drachm and a half, either in solution, in capsules, or rubbed up in sugar; and if the stomach rejected it he gave a double dose *per rectum.* The temperature, which ordinarily ranged between 104°to 106° Fahr., fell to 100° to 100·5° Fahr., and in many cases to 99 ; the pulse was also reduced. Of 179 cases thus treated, both sexes, and all ages, only four died. Patients so treated complained of less pain in the back and limbs than those using quinine. The Doctor himself, when confined with the disease, and taking large doses of salicylic acid, does not remember that he suffered from these pains. He regards this drug of great value both in the intermittent and remittent type, but has no experience of it in the continuous form. In the recent epidemic we are not aware whether the drug has been used with any success. It certainly should be given a fair trial in this dreadful plague.

Intermittent Fever.—Professor Senator says in this disease, in his experiments, that the effect was very marked. In five out of ten cases, the cure was complete after once or twice employing the drug. The other five, being dispensary patients, did not reappear. The dose used was from 15 to 30 grains given shortly before the paroxysm; in children smaller doses were given; the pure acid was used. Our experience with the drug in this disease is not as favorable as the above, but rather in accord with the following statements of Dr. Hiller,† of Berlin. He gave the acid to twelve soldiers, of whom six had ague for the first time, and six were suffering from relapses, and he found that though it exerted some curative action, yet that ten times as much acid must be given to produce the same effect as quinine; that it acts only on mild forms and those treated early, and its action is scarcely perceptible even in large doses, and that relapses occur earlier and more frequently than is the case with quinine. Reiss found some that were cured at once, while in others it was necessary to give quinine before the disease was subdued. So that it is hardly probable that this drug will supersede quinine, especially when used in very large doses, as it will be fully as expensive as quinine.

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* "Berliner klin. Wochen.," September 2, 1878.

† "Med. Times and Gaz.," April 29, 1876.

Pertussis.—Dr. R. Otto,* believing whooping-cough to be due to the presence of a vegetable parasite, employed an inhalation of a two per cent. solution salicylic acid, in an epidemic which occurred at Lisetz in Livonia, in August, 1876. The treatment was applied in seven cases, commencing with the convulsive stage. The number of paroxysms was rapidly diminished in all the cases, the best results being obtained in children in rooms uniformly heated. The number of cases, being so few, show what can be done, and call for further trials in this disease.

Rheumatic Iritis.—Dr. Galezowski,† in a note to the Academie de Médecine, reports the result obtained by the use of the salicylate of soda used internally in this disease, as follows: "In eighteen cases an amendment in all the symptoms was obtained, often in three or four days, in the same patients, who, prior to its use, had been under treatment with similar symptoms for a month or six weeks; the most remarkable feature being the immediate disappearance of the pain and redness, and later, the subsidence of the exudation.

"Excellent results have also been obtained in rheumatic inflammations of the sclerotic; this was especially noticed in eighteen cases of scleritis and sclero-keratitis, where other treatment had been of no avail after several months, the salicylate producing a cure in from one to six weeks."

In Ear Diseases.—Dr. Bezold ‡ finds that salicylic acid succeeds well as a parasiticide and rapidly destroys otomycosis.

Perforations of the membrana tympani cicatrize very rapidly when treated with injections of this drug.

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* "London Med. Record," December 15, 1877.

† "Bull. de l'Acad.," Feb. 5, 1878.

‡ "Monatsch. f. Ohrenheilkunde," Nos. 8 and 9, 1875.

It also arrests the development of the germs of gonidia. It is important to continue its use until all germs have been extracted from the ear by injections. It is also of use in chronic suppurative inflammations, used in the form of an alcoholic solution. It has not been generally used in this country, but those having used it speak very highly of it.

Neuralgia.—In this affection it has been used with good results where other remedies failed, by Descroizilles.*

Dysentery.—In this disease it has been used by Dr. Orr, of Cincinnati, one of the first, probably, in this country to use it. It has also been used in this disease at St. Francis's Hospital, this city, given in thirty-grain doses three times daily. It has been used also, as we have previously seen, to disinfect fæces of their disagreeable odor in certain diseases.

We might, no doubt, enumerate other diseases in which it has been used, but having named and described the most important ones we will close the medical branch and go on and speak of its surgical uses.

SURGICAL USES.—*Wounds, burns, ulcers, etc.*—Professor C. Thiersch † made some experiments in the Leipzig Hospital, as to the antiseptic action of salicylic acid in surgery. He says that when sprinkled, either alone or mixed with starch, on contused wounds, not yet cleaned, and on sloughy ulcers, it destroys for a long time the odor, without causing any inflammatory action of importance. In solution of one part acid to three parts phosphate soda, and fifty of water, it favors the healing of granulating surfaces. On clean fresh wounds made by operations, the wound is kept under a cloud of salicylic spray (one of acid to three hundred of water), during the operation.

An amputation at the thigh was healed by this method, having no fever, pain, or swelling, the first renewal of the dressing being on the sixth day, the slight secretion being without smell. Dr. Thiersch has prepared a salicylic wadding to take the place of the carbolic dressing in Lister's antiseptic method. He prepares the salicylic wadding in the following way:

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* "Progrès Med.," July, 1877.

† Volkmann's "Sammlung klin. Vorträg.," Nos. 84, 85, 1875.

℞. Acid. salicyl. ℥ij, spts. vini rect. Oij; dilute this with aquæ Oxx, 178° F., then add 6 lbs. 8 oz. of cotton batting, or, better still, absorbent cotton (cotton with oil removed). This is then allowed to dry. When dried it contains about three per cent. of salicylic acid. Cotton may be saturated with stronger solutions of acid, and, in order to discriminate between them, they may be colored with carmine, etc. Where wounds have a profuse discharge, jute (the inner bark of a Bengal plant, the corchoras capsularis) may be substituted for the cotton, as it is more absorbent and porous. Jute may be obtained of the Dolphin Manufacturing Co., No. 65 Duane Street, New York, at eight cents per pound.

Professor Thiersch treated one hundred and sixty surgical cases by this method, using the wadding and gauze in place of carbolic oil.

Dr. Orr, of Cincinnati, used it in a chronic ulcer of the leg, with very offensive odor, causing not only the odor to disappear but the ulcer to take on reparative action.

In May, 1875, it was first used in Bellevue Hospital as an external application to chronic ulcers, and to various wounds, in solution by means of soda phosphate and water (1 to 300).

On a severe burn, where other methods had failed to promote the granulations, the acid dissolved in olive oil (1 to 16) caused marked and constant improvement.

Dr. Wagner [*] remarks that this acid may completely replace carbolic acid as a disinfectant in recent and chronic ulcers when applied on the bandages. In gangrenous sores he applies a thin layer of powdered salicylic acid on the surface, and places over it some wadding. In those cases where the discharge passed through the bandage, it was inodorous; then another layer of wadding, sprinkled with acid, was laid over it. In most cases the bandage remained on a week, and usually the healing of the ulcer was complete.

Mr. Callender,[†] in a report to the Clinical Society, London, in reference to salicylic acid as an application to wounds, says he used an aqueous solution with phosphate of soda, olive oil

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[*] Schmidt's "Jahrbücher," June 17, 1875.

[†] "British Medical Journal," October 16, 1875.

49 parts, to salicylic acid 1 part, and another solution of acid 1 part, bicarbonate of soda ½ part, water 100 parts. Sometimes an ointment made with lard was used. Seven cases were reported.; in three a vesicular eruption was caused by it, and necessitated its withdrawal; in another local irritation was set up, in the other the granulations became flabby; the remainder healed rapidly under the application. From these cases and other observations, Mr. Callender arrived at the following conclusions: Taking its good points, he found that salicylic acid was free from odor, and so far was agreeable to the patients; that wounds healed under its influence, and during repair were free from bad smells; that unless used strong with alcohol, or but little diluted, it did not cause local pain. Its bad points seemed to be these: that above the strength of two per cent. it caused local irritation and some constitutional disturbance; that its influence upon a recent wound, as after an operation, was not so powerful to prevent the occurrence of decomposition as carbolic acid.

Sir William Jenner reported a case, to the same society, of a lady with a large burn, dressed with salicylic acid, in whom a good deal of constitutional disturbance and a general rash, very similar to the rash of scarlatina, had been produced. After a time the rash returned, when the same dressing had been resumed. This rash covered the face and the entire body. No odor was noticed in the burn, though it was a large one.

Dr. Heinlein * relates a similar case of urticaria following the use of salicylate of soda; the eruption faded, and disappeared when the medicine was discontinued, but reappeared upon its further administration. Hence, salicylate of soda must be classed with those drugs—cubebs, copaiba, santonin, turpentine, quinine, etc.—the administration of which produces urticaria in very sensitive constitutions.

Thus we see Professors Thiersch, Wagner, and others of the German school largely in favor of, and Mr. Callender and others of the English school opposed to, salicylic acid in surgery, especially as a rival to carbolic acid. We feel that more

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* "Aerztliches Intelligenz Blatt," April 9, 1878.

extended use should be made of it, and that then it will be found second only to carbolic acid, if not as good. The urticaria produced was doubtless due to the extreme susceptibility of the patient to any medication. A case is reported of this eruption occurring after a small dose of quinine in intermittent fever.

In Gynæcological Practice.—Professor Crede * has employed it for some time past instead of carbolic acid as a disinfectant for the hands, as a vaginal injection on puerperal women, and for sprinkling over puerperal ulcers, etc. The strength of the solution used was from 1 in 300 to 1 in 900, or as a powder mixed with starch 1 to 5.

Most favorable results have followed its employment in midwifery practice. It has also been used to wash out the peritoneal cavity after ovariotomy.

Empyæma.—In this disease, after paracentesis thoracis, a solution of 1 part of acid to 500 of water has been used as an injection in the after treatment of the case. This case was treated at Roosevelt Hospital in 1875.

Cystitis and Pyelitis.—In cystitis a solution of the acid, 1 part to water 500 parts, injected through the urethra, removes all odor and causes the muco-pus to diminish. Taken internally, the same result is partially obtained.

Pyelitis: in this disease the use of the acid is suggested by Ebstein, given internally. Whereas carbolic acid seems to have no effect upon vesical or renal catarrh, although excreted in the urine, the salicylates do in most cases act favorably.

Venereal Diseases.—Dr. Boyland,† connecting thecontagion of these diseases with the presence of microzymes, was led to try salicylic acid as a remedy in this class of affections. If we place upon the object-glass of the microscope drops of pus from a gonorrhœal patient, we find that the micrococci increase or decrease in direct proportion to the severity of the inflammation. As much may be claimed for phagedæna, balanitis, posthitis, etc. He reports three cases of acute gonorrhœa which did remarkably well—using an injection of acid, 1 to 300 of water, three times a day, and giving about twelve grains of the acid per orem during the day.

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* "Archi. f. Gynäk.," Bd. vij., Heft 3.

† "American Journal of Medical Science," October, 1875, p. 413.

Three cases of chancroid did well under local treatment of the acid.

One case of balanitis was cured by use of a compress wet with salicylic acid, 1 to 100 parts of water.

One case of serpiginous ulcer of the leg, treated in the same manner, improved.

In our experience with venereal sores, we have found that mere disinfection did not answer, but that cauterization was necessary, especially so in chancroidal ulcers. We allow that salicylic acts well after the cauterizing has been accomplished, but have yet to see its good effect in such ulcers when used alone. In gonorrhœa we have had no experience with it.

AS AN ANAPHRODISIAC.—Its influence as an anaphrodisiac was asserted not long since by Dr. Jewett, and has recently been confirmed by a veterinary surgeon, whose patient had been taking soda salicylate for some time. Damiana restored the sexual appetite promptly.

IN PYÆMIA, ERYSIPELAS, SURGICAL FEVER, ETC.—The experiments of Dr. Furbringer, of Heidelberg, have shown that salicylic acid possesses decided antipyretic properties in septicæmic fever; its use is also indicated in pyæmia, erysipelas, surgical fever, and the like. Many minor diseases might be enumerated, but time will not allow of a more extended review of the subject. What we have said in reference to the diseases mentioned may serve as an outline of the class of cases in which this drug is of therapeutical value. That salicylic acid and its salts stand at the head of all hitherto known remedies for acute rheumatism, we think all will admit. We will not claim for it the name of "specific," for we hold that there are none in medicine, yet it is as near that elevated position as it is possible for any drug to be. We have in the acid and its salts a powerful enemy to high temperature and febrile diseases, and it is of especial value in diphtheria, typhoid, and smallpox, for this very reason. Its antipyretic action is undoubtedly only second to that of quinine.

That this drug, which it was at first thought would soon pass away like so many before it and be forgotten, is to-day accepted by the great mass of the profession, we hold to be proof that it is one of the few valuable drugs in our possession. If the medical art is to keep step with the progress of physical sciences, physicians can not afford to pass by such substances as salicylic acid and its compounds, when offered by chemistry, without investigating their effects upon disease; although many drugs thus presented would prove utterly useless, yet we are in duty bound to try each as it is brought forward. By such patient investigation many valuable drugs may be added to our store. Much might be said of the uses of this acid in the industrial arts—for instance, in the tanning of leather, in the manufacture of glue, beer, wine, etc., but such points would lead us outside the limits of this paper.

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ART. II.—*Functional Nervous Derangements simulating Structural Disease of the Heart, and the value of Electricity in their Treatment.*[*] By A. D. ROCKWELL, M. D., Electro-Therapeutist to the New York State Woman's Hospital, etc.

IF there are beyond question many who, attending to-day to the ordinary duties of life unconscious of danger, will tomorrow succumb through organic heart disease, it is equally true that others are living a life of terrible expectancy, because of a fixed but unfounded suspicion of structural derangement or decay.

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[*] Read before the New York Neurological Association.

As illustrative of this I recall the fact that my friend, the late Dr. H. H. Gregory, up to the hour of his death, from dilatation and rupture of the right auricle, bore the burden of a very large practice with but a faint suspicion of any cardiac disturbance; while at the present time I have under my care a physician of this city who, above a decade ago, was, by a distinguished auscultator, given but two or three years to live. This patient is now suffering from a nervous affection, and is occasionally annoyed by palpitation, but, so far as I can ascertain, is not the victim of well-marked or serious organic lesion. It is therefore of the greatest importance that a correct diagnosis should be made in suspected heart disease; and fortunately, in the light afforded through physical exploration, this is, as a rule, no very difficult matter. Valvular disease, as well as hypertrophy and dilatation, can with ordinary care be detected, but in certain cases of impaired nutrition, resulting in fatty degeneration, as much can not always be said.

In fatty degeneration of the heart the muscular substance disappears and is replaced by fatty granules, and as this condition is at first generally circumscribed, and the fatty atrophy slight, neither the objective nor subjective symptoms are sufficiently prominent to attract attention. Further on, however, the signs that go to make up this condition become better defined, and in most cases render a correct diagnosis probable. It should be distinctly borne in mind, then, that we can not depend on physical signs alone. In regard to this the great diagnostician Stokes (quoted by Fothergill*) makes this extreme statement, that "it would be difficult or impossible to draw a line of distinction between the signs of simply weakened heart and this condition combined with fatty degeneration." If, however, the first sound of the heart is short and faint, and its action slow and irregular, and as associated symptoms we have præcordial oppression, with palpitation after undue exertion, a tendency to pallor and syncope, and inability to rest with the head low, it is quite probable that fatty degeneration is present, and especially so if, with the absence of valvular disease, there coexists the fact of dilatation. And yet, in the light of occasional observations, I am led to believe that all, or nearly all, these symptoms may coexist, and even the added sign of syncopal attacks, without the presence of structural decay. It is quite certain that long courses of dissipation, especially those of a sexual character, are not unfrequently followed by the most profound prostration of the general nervous system; anæmia follows or is coincident, and then we have every grade of cardiac disturbance, together with the most profound depression of spirits. In young women again, during the sexual formative stage, the same symptoms are observed. Just now I have under my care a young girl of eighteen, who, from the beginning of puberty, has suffered from aggravated menstrual derangement, and, in addition to some of the symptoms I have enumerated, she frequently suffers from what to her is far more alarming, and that is, a feeling as if the heart had suddenly stopped beating; and yet she certainly has no valvular trouble, and it would indeed be strange if at her age there existed fatty degeneration. The idea, then, that I wish to convey is, that in not a few instances of disordered action of the heart, of a sufficiently persistent and distinctive character not only to suggest but to render highly probable the existence of structural derangement, and especially of fatty degeneration, the whole disturbance may be simply a sequence of physical and mental abuse by which the nervous system has been exhausted, while the heart is structurally sound. And, furthermore, in those cases where we find the first sound of the heart deficient in strength, and a vigorous impulse wanting (unassociated with evidences of dilatation), a compressible and irregular pulse, together with palpitation, præcordial oppression, and, in rare cases, syncopal attacks, I know of no way by which we can be certain of the existence or non-existence of decay other than the results afforded by rest, time, and treatment. If recovery, more or less complete, takes place, we have certainly not been dealing with a fatty heart; and in this connection I present two cases, which have constituted the basis of the foregoing remarks, and which illustrate the remarkable sameness of the symptoms that result from organic heart disease and simple functional nervous derangement:

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* "Edinburgh Medical Journal," February 7, 1878.

CASE I.—Mr. P. C., aged twenty-eight, stated his case substantially as follows: At an early age he began a course of dissipation, sexual and otherwise, and for several years experienced no physically injurious effects. In 1870, however, at the age of twenty, he began to be conscious of some tendency to palpitation of the heart, subsequent to excesses.

Becoming more prudent, he rapidly recovered, but in 1872, after several months of dissipation, the old symptoms returned with redoubled vigor. Again becoming more discreet, he gradually improved until 1874, when, becoming less regular in his habits, he was prostrated for the third time, and shortly experienced a sudden syncopal attack, which has with varying degrees of severity been often repeated. Accompanying the attacks was a feeling as if a cloud obscured his vision, completely isolating him. If standing, he would fall, without, however, losing consciousness, and would subsequently be agitated by violent tremors. From this time until the early part of 1877 he neither improved nor became markedly worse, and was able to give more or less attention to business affairs. In 1877, however, the attacks of oppression about the heart, palpitation, and partial syncope, became more frequent, and when he fell under my observation they were occurring every week, completely prostrating him, unfitting him for every exertion, and rendering him as helpless as a child. The lips of the patient, which were thick and projecting, and the mucous membrane prominent, became at these times almost perfectly white. The face also was in a less degree pallid, and the appearance presented was ghastly in the extreme. Examining the heart when in its usual working order, its rhythm was found to be somewhat disturbed; the pulse was compressible and irregular, but the objective evidences of serious structural disease were wanting. The patient was subsequently examined with much care by Dr. Austin Flint, who failed to elicit symptoms sufficient to justify an opinion as to the probability of valvular or other serious organic disease.

What were the indications as to the method of treatment? There was hardly a chance for suggestion as to internal medication, since under various forms he had taken a great variety of tonic and sedative preparations. To the tonic effects of general faradization, however, he had never been subjected, and this form of treatment I began, October 7, 1878; and to this date he has taken but little medicine, only pepsin and bismuth occasionally as a corrective, and pills for the relief of constipation.

The patient has steadily improved, and, although not entirely relieved of every symptom, is able to attend steadily to business. The first effects of the treatment were observable in a decreasing frequency of the syncopal attacks, a remission of pain in the præcordial region, a less disturbed rhythmical action of the heart, and a firmer pulse.

A short time after my first relations with this patient I was hurriedly called to see him one stormy night, the statement being made that he was probably dying. I found him propped in bed, with a livid complexion and gasping for breath, and with a rapid but feeble pulse. The bowels were distended with gas, and he complained of acute pain from the sternum to the back, as though the diaphragm was spasmodically contracted. I immediately administered an injection, and gave a preparation of creosote with quinine and ginger, which were followed by quick relief. I refer to this attack because it would seem to confirm Trousseau's assertion that flatulent distension, causing cardiac distress, may occur through enfeebled enervation of mucous membranes, independent of fermentation.

Case II.—Mr. L. D., aged forty-seven, consulted me in April, 1878, giving the following history: His health had been uniformly good up to October, 1877. At this time, after several months of unusual mental exertion and close confinement in the office of a mercantile house, his attention was called to the fact that slight exertion, and especially the effort expended in ascending stairs, resulted in acceleration of the heart's action and a sensation of breathlessness. He became sleepless, and was especially uncomfortable without his head was well raised in bed. Later on these symptoms became associated with a general neurasthenic condition, loss of appetite, and nausea. On physical examination, not only was the pulse found to be weak, slow, and irregular, but the first sound of the heart was so faint and abrupt as to be hardly perceptible.

These symptoms were quite sufficient to suggest the possibility of fatty degeneration of the heart, and the patient firmly believed that he was suffering from incurable organic disease. As he found it impossible at this time to remain longer in the city, I prescribed a combination of digitalis and bromide of potassium, enjoining also, so far as possible, a respite from severe exertion, both mental and physical. Through written communication, I learned that under the treatment adopted, combined with complete rest, there was an appreciable, although not a very decided, change for the better. During the month of August, after a spasmodic effort in the way of balancing some business accounts, and immediately following a short walk exposed to the sun's rays, he fell to the floor quite unconscious. He soon recovered on the administration of restoratives, and the following week came to the city. Physical examination revealed substantially similar results as at his former visit, but he now complained of a disagreeable sensation over the heart, with shooting pains down the left arm, simulating neuralgia, that recurred with tolerable regularity every evening. I prescribed a combination of digitalis and quinine, and at the same time began, as in the former case, the administration of general faradization.

The pulse of the patient rarely rose above fifty-five, and just previous to the first application it was but fifty. In fifteen minutes, at its conclusion, it had risen seven beats. A decided feeling of invigoration followed, and a more restful night than had been experienced for months.

The treatment was repeated every other day and with results unusually rapid and decided. The heart's action became more regular and frequent, as well as stronger; and the severe neuralgic pain down the left arm from which he had lately suffered was entirely dissipated by the first application. It may be now said that he has entirely recovered, for it is only after undue taxation of brain and close confinement that he in any way suffers. Cases similar to the above are, I am convinced, not rare, nor are such results of treatment altogether exceptional.

So far as regards the value of electricity to give tone and strength to the nervous system, there is, I am certain, but little difference of opinion among those who have had any adequate experience in its use. And in speaking thus, I do not refer to its local use alone, but to thorough, systematic, and carefully graduated applications to the whole body. This has been termed a grape-shot method of procedure, and so perhaps it is, but in no greater measure than is the administration of any internal medicine which performs its function through its action on the whole nervous and circulatory system, or the act of sea-bathing, or the action of the sunlight.

The failure of general faradization to receive such recognition from the profession as those of us who have for years been engaged in its systematic and proper use believe to be its due, must in great measure be attributed to the inconvenience to which the patient is put by the act of disrobing, and the time and labor demanded of the physician, to say nothing of the experience demanded for its successful administration.

In regard to the effects of *local* applications of electricity on the heart's action, much might be said. So far back as 1872, Fothergill had written "that in electricity we possess a power that may be of great service in the treatment of heart failure. The effect of a feeble electric current is to increase the force and lessen the frequency of the heart's action." This effect is observed under the action of the faradic current, when no effort is made to concentrate its influence in the region of the pneumogastric.

Excitation of this nerve, on the contrary, exercises a most potent effect in slowing the action of the heart; and in the electrolytic treatment of the exposed tissue, after the removal of malignant tumors of the breast, I have always observed a very remarkable diminution of the strength and frequency of the heart beats. Neither local nor general applications exert a very marked influence upon the normal pulse, but in those conditions of nervous derangement when it is often so astonishingly rapid, as well as in those other cases where it is so exceedingly slow, the effect of general faradization is very great. In quite a number of cases of this class where the pulse has been so high as 150 or 160, have I succeeded by this method in reducing its frequency by 40 or 50 beats to the minute, in a very short time. Even where the irritability of the heart is supposed to be of a reflex character, this result has been obtained. In one interesting case which Dr. T. G. Thomas saw for me, where he relieved an old and aggravated uterine displacement, the pulse, which often arose to 150 per minute, continuing thus for hours, would in the course of a few moments under general applications be reduced in frequency to 100 or 110.

With the galvanic current or with simple local applications in this and other analogous cases, I have been unable to produce results as satisfactory, yet in the condition known as exophthalmic goitre it is well known what a decided effect is produced, not only temporary but permanent, in lessening the force and frequency of the heart's action, by galvanization of the sympathetic and pneumogastric. Why it is that general faradization is so inferior here, and so superior in other cases, I can only account for by the fact that, in exophthalmic goitre, the inhibitory power of the vagus may be interfered with, and any excitation of this nerve, such as is readily caused by galvanism, restores its power to retard the action of the cardiac ganglia.

In more general nervous derangements, however, where cardiac disturbance is a prominent symptom, general faradization produces its good effects by acting as a sedative tonic on the nervous system as a whole.

It is evident that the effects of general faradization must vary in different individuals and in different conditions, since this is true in a greater or less degree of all remedies. With general faradization, however, this is especially marked; and indeed it may be said of electricity in general that there is no remedy to the effects of which there is a wider degree of susceptibility. For the benefit, therefore, of those who may be interested, I give a very brief statement of what much observation has taught in this direction.

In health, the first, and as a rule the only effect following an application of general faradization, is one of invigoration, which, in the course of a few hours, more or less subsides.

In pathological conditions, however, five effects, or rather five groupings of effects, have been observed: 1 (and perhaps most frequently, providing always that the applications are not too strong, are carefully graduated, and in all respects given judiciously). The treatment is followed, as in health, by a feeling of invigoration alone. 2. Invigoration may be followed by depression, and this again by invigoration. 3. The immediate result of the application may be depression with subsequent invigoration. 4. No immediate effect may follow, but in a short time depression is experienced, succeeded in a few hours or on the day following by invigoration. 5. Depression may immediately follow, succeeded by no feeling of invigoration.

In cases such as the last, especially when after repeated attempts the same phenomenon results, the treatment can not be of service and may do harm and should not be continued. Patients, however, with whom electricity works thus badly are not often met with.

The special effects of general faradization vary even more than do the general effects. The pulse, temperature, and appetite, together with the secretory and excretory processes, may all be more or less influenced. One strong illustration of the many that are constantly observed, occurred the other day in the person of one of my patients at the Woman's Hospital, and to which I called the attention of the house physicians. The immediate result of treatment was to excite an appetite such as had not been experienced for three years.

This paper is not supposed, however, to be devoted to the details of methods of treatment, and I reserve further remarks on this point.

ART. III.—*On the Different Methods of Artificial Alimentation.*[*] By THOMAS J. GALLAHER, M. D., of Pittsburgh.

I PROPOSE to make a few remarks on the different methods of administering food aside from the voluntary method by the mouth. I propose also to say something of the substances to be employed in these various methods. This subject has not been treated with sufficient fullness in systematic treatises; but it has received considerable attention in medical periodical literature.

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[*] Read before the Bedford Medical Club.

The most common method of artificial alimentation consists of injections into the rectum. Beef-tea and broths of various kinds have been employed in this way from time immemorial, and instances innumerable are given where life has been sustained by these for long periods. Recent observations, however, do not fully confirm the great estimate put on these preparations as formerly employed.

It is now taught by many that the albuminous, caseous, and fatty elements of such enemas, without previous digestion, can not be absorbed by the large intestines, and that, when these substances are introduced into the rectum unchanged, they are precipitated against the walls of the bowel, where they undergo fermentation and cause flatulency and pain. Dr. W. B. Richardson asserts that fatty substances, even after emulsification, can not be absorbed because of the absence of lacteal vessels in the large intestine, by which alone they can be taken up.

Before finishing the subject of beef-tea injections, I will give some interesting experiments bearing on the subject of rectal digestion and absorption, from which imperfect conclusions may be drawn.

Experiments in reference to this subject were recently made in Germany by Czerny and Latchenberger. Five fistulous openings having formed in the lower part of the colon, in a gentleman who had long suffered from scrotal hernia which had inflamed and ulcerated, offered a good opportunity. The portion of the bowel experimented on extended from the lower of the fistulous openings in the groin to the sphincter muscles of the arms, a distance of twelve inches. It embraced therefore the rectum and a few inches of the sigmoid flexure of the colon. When water alone was injected, from 617 to 772 grains were absorbed in seven hours. The white of hard-boiled eggs cut into small fragments, shreds of fibrin, soluble albumen, starch, and fats did not dissolve or undergo any digestive changes.

The subjection of these substances to artificial digestion in mucus obtained from this part was attended by a similar result. Bits of the white of hard-boiled eggs inclosed in perforated capsules were introduced through the fistula into the bowel and retained there ten days without the slightest evidence of solution. It was observed, however, that all of these substances, when previously subjected to artificial digestion, were absorbed.—("American Journal of Medical Science," April 1874, from "Lancet.")

Dr. Williams relates a case of supposed gastric ulcer, where the weight of the patient was maintained by nutritive injections for a period of ten days. Beef-tea, eggs, and brandy were the articles employed.—("American Journal of Medical Science," January 1875, from "Lancet.")

Some interesting experiments were made by Dr. Leube, of Erlangen, in 1872, chiefly upon dogs. He combined the pancreas of a pig or ox with various articles of food, and injected the mixture into the rectum of the dog. He found that digestion was performed and the nutritious elements absorbed.

The dog, by this method of feeding, retained its flesh and strength, while the evacuations were of a proper consistence and smell. Applying the knowledge thus acquired to the human subject, he met with similar success by injecting into the rectum similarly prepared articles of food.

His experience enabled him to formulate the following preparation, which he preferred for anal injections: From 2½ to 3 ounces of the pancreas of the pig or ox, carefully deprived of its fat and finely minced, were combined with from 5 to 9 ounces of beef, also finely minced and grated. These articles were well triturated together in a mortar with the addition of warm water, until the whole acquired the consistence of thick soup. The bowels having been evacuated an hour before, the whole amount was injected into the rectum at once with a syringe having a wide nozzle. The presence of this mass in the bowel, as a rule, produced no uneasiness, but would often remain from twelve to thirty-six hours without giving rise to a stool. Fat and starch were frequently added to the preparation before injecting.

Two cases, one affected with malignant disease at the upper part of the intestinal tube, and the other with gastric ulcer in which no food whatever could be retained upon the stomach, were subjected to this method of alimentation for a long time.

It proved, in his opinion, superior to all other means in maintaining the strength and flesh of the patients. The pulse became stronger, and there was an improvement in the general condition and spirits of the patient.—("Half-Yearly Abstract," July, 1872, page 146.)

Recurring to beef-tea as an article for rectal alimentation, the experiments of Czerny and Latchenberger show that neither fat, albumen, fibrin, starch, nor any saccharine substances which it may contain, can be digested to any extent by the rectal fluids; and that these substances as such can not therefore gain entrance to the system by the rectum. It is true this bowel contains some follicles of Lieberkuhn and other glands by which a small amount of mucus and digestive fluid is normally secreted; but the amount is so small that its influence on digestion practically amounts to nothing. What then becomes of the beef-tea or animal extracts when thrown unaltered into the bowels? The water, organic saline principles, and inorganic salts are certainly absorbed without change. These, of course, afford some nutrition to the body. But the albumen, fibrin, casein, and fat remain in the bowel for a while and then pass away. These substances must be digested artificially either outside of the body or while in the rectum by means of rennet, pepsine, pancreatine, etc., before they are in condition to enter the blood. After complete digestion the albuminoids are readily admitted to the circulation by capillary absorption, while the fatty matter can only be taken up to a very moderate extent. It seems certain that the existence of lacteals is not essential to a limited absorption of fatty emulsions.

In the preparation of this tea the meat should be cut very fine and allowed to macerate in cold or tepid water for not less than four or six hours. One pound of beef to one pint of water is the proportion generally employed. The whole may be boiled for thirty minutes or more. Some prefer using it uncooked. When sufficiently cooled, some of the digestive principles already alluded to should be added, and the whole gently agitated for an hour or so, when it is ready for use. Pepsine recently prepared from the stomach of the pig, calf, or sheep, according to the British formula, is preferable to the article sold in the shops.

As to Leube's preparation of grated raw meat, intimately combined by trituration with the pancreas of the pig or ox, I can not speak in approving terms. I employed it on one occasion with uncertain results. Aside from the uncertain action of the pancreatic substance and juice on the albuminous ingredients of the meat, the difficulty experienced in making the preparation will always be an obstacle to its general adoption.

Defibrinated blood has recently been introduced as a valuable article for rectal alimentation. From 4 to 5 ounces are recommended to be injected at a time, to be repeated several times daily. Dr. A. H. Smith, in a report read before the New York Therapeutical Society August 12, 1878 ("New York Medical Journal"), speaks of it in encouraging terms. Many of the elements of this injection will of course be admitted to the circulation, through the coats of the large intestine, but whether the serum and metalbumen, modifications of common albumen, can be absorbed without previous digestion, is a matter that can only be settled by further research.

Many cases come to the notice of the physician where, from stricture of the œsophagus, disease of the throat or mouth, or obstinate refusal on the part of the patient to take food, a sufficient amount of nourishment cannot be given to sustain life.

Where anal or rectal disease exists, in conjunction with such cases, food can not be introduced by the bowel. Other methods of alimentation must then be resorted to. A common expedient is to force the food into the stomach through the œsophagus tube. Dr. B. W. Richardson prefers the double to the single canula for this purpose, for by it food may be passed into the stomach by one chamber while the gastric gases are escaping by the other. In the use of the single tube these gases often interfere with the feeding.

In consequence of the difficulty and sometimes danger of giving food in this way, feeding by the nose has been suggested and successfully carried into effect. For this purpose a syringe holding from 2 to 4 drachms may be employed. The patient, should he resist, must be placed in proper position, and held till the food is administered. One syringe full should then be gently injected into the nostril, then another, and another, until the amount desired be passed into the stomach. Time should be given between each syringeful for the patient to swallow and breathe.

All kinds of digestible food that can be reduced to a liquid or semi-solid state may be given in this way. In persons who offer no resistance, no difficulty whatever is experienced. The patient, however, must always lie upon his back, with head inclined backward and chin slightly elevated at every nasal feeding. Small children, even those at the breast, may easily be fed in this way.

Dr. Alexander Moxey, who was among the first, if not the very first, to call the attention of the profession (especially those engaged in the management of the insane) to the value of feeding by the nose, prefers passing the food through a funnel. After placing the patient in a proper position, he inserts the little end of a small Wedgewood-ware funnel just within the nostril, and gently pours the food into it, in small portions (two or four drachms) at a time. One pint or more may be introduced at one feeding, and the operation repeated two or three times a day, or as often as may be necessary. The mucous membrane of the nostril does not become irritated by the passing of food over it. Cold water causes more uneasiness than food. The articles should always be used while warm. For insane persons and those who are determined to commit suicide by starvation, this method is especially applicable. Many of these will take food in the natural way after having been subjected to this process a few times.

Dr. Tennant advocates the practice of feeding fever patients by the nose, and Dr. Hinchman favors nasal feeding among the obstinate insane.

This method has advantages over all others in many cases. The patient can always be easily restrained so that the nurse can operate with success, and the right kind of food can always be carried to the place where digestion and absorption are assured, with little or no risk to the patient. ("Lancet," May, 1869, American edition.)

Since the discovery of administering medicine by hypodermic injections, attempts have been made to administer food by the same process. Stricker and Aser some years ago injected peptones beneath the skin with the view of absorption and nutrition, and more recently Munzel and Perco of Germany succeeded in administering subcutaneously substances that had not undergone artificial digestion. Dogs were the chief animals operated on, but in one instance they injected nine grains of undigested food beneath the skin of a man. In these experiments fatty substances, such as olive oil, train oil, almond oil, etc., and subsequently milk, yolk of eggs, and dissolved sugar, were employed. The milk, eggs, and sugar were quickly absorbed, while the fatty matters disappeared more slowly. After 48 hours no trace of fat was discoverable. From 1 to 8 drachms of oil were injected at a time. ("American Journal of Medical Science," October, 1869.)

Dr. James T. Whittaker reports a case of supposed gastric ulcer in a young man of twenty, in which nourishment was given exclusively by injections beneath the skin for a period of six days. Milk alternating with extract of beef was at first given, but in a day or two cod-liver oil was substituted and used exclusively. From 2 to 3 ounces of oil were injected daily, and on one day as much as 4 ounces were given. No pain or uneasiness was occasioned by the presence of the oil, but two small abscesses arose from the milk injections. ("American Journal of Medical Science," April, 1877.)

The most important and successful case of artificial feeding through the skin on record is reported by Dr. Kreng. The patient was an insane Hungarian, aged fifty-seven years. Having refused food, the doctor was obliged, for a period of 27 months, to support him by injections into the stomach through the usual œsophagal tube. At the end of this period a violent cough, an ejection of the food along the side of the tube, and threatening suffocation, attended every effort at giving food.

It was now determined to administer food subcutaneously. Accordingly from 15 to 20 cubic centimetres of olive oil were injected beneath the skin twice daily for a period of twenty days, no other nourishment having been given during that time. The oil certainly furnished him with nourishment, for he retained his flesh and strength. At the end of this period he ate without compulsion for some time, but on a short relapse occurring the injections were resumed. On one occasion the white and yolk of an egg beaten together were injected; but this was followed by an abscess. Each injection required from half an hour to an hour for its completion, and when the oil was injected slowly it gave rise to no pain. In this case it appears certain that the oil was absorbed and assimilated. ("New York Medical Journal," March, 1876, from "Gazette Médicale de Paris.")

The results of the experiments of Munzel and Perco, as well as the experience of Kreng and Whittaker, on the human subject, appear to be at variance with the experiments of Bernard and Barriswil; for while the latter found that crude albumen and gelatine were ejected from the blood without change when introduced into the veins, the former found their patients supported by these and other articles in the crude state when placed beneath the skin.

To reconcile this apparent discrepancy, it may be inferred that when crude articles in quantity are suddenly forced into the blood they are as suddenly forced out as foreign matter; but when these same articles are more slowly received into the blood-vessels, as is the case in subcutaneous injections, the blood may have the power of digesting and fitting them for the assimilative process. There may be, therefore, such a thing as digestion in and by the blood. It is believed by some that food may be introduced into the system by absorption through the skin. I have heard of children being bathed in beef tea under the impression that the tea was absorbed. It is probable that the water and organic salts are the only elements that enter the system.

This method of giving soups may, therefore, be condemned as comparatively useless. That oils can be admitted to the blood by friction I believe is a generally admitted fact. On many occasions I have applied cod-liver oil by friction to the skin of children suffering from marasmus, and have reason to believe with good effect. It is a matter of conjecture whether it enters the blood through the venous or lymphatic capillaries.

I have now imperfectly sketched the different methods of artificial alimentation, and have only further to say that two or more of these methods may be employed at the same time, if in the opinion of the physician the urgency of the case demands them.

Feeding by the nose and rectum, and through the œsophagus tube, must always be the chief artificial methods of administering food, since they are comparatively easy of performance and certain in results.

Besides the artificial methods of feeding above described, mention might be made of the transfusion of blood, and the intravenous injections of milk and peptones. As these subjects have recently occupied the attention of many eminent men who are yet engaged in investigations, and as they do not strictly belong to the subject I have selected for the evening's paper, I will forbear giving the history and results of these operations. They are, however, of great importance, and deserve the attention of the profession. It is to be hoped that the investigations now being made will free them from the many errors and uncertainties by which they are surrounded, and place them on a sound and correct basis.

Clinical Records from Private and Hospital Practice.

I.—*Cancer of Duodenum with Hepatic Obstruction.* By D. K. Dickinson, M. D., Deadwood, D. T.

On December 10, 1878, —— Pearce was admitted to the Sisters' Hospital with the following history: Was forty-five years old; mother and father both dead; did not know what they died of; two sisters and brother living; all healthy. For several weeks prior to his application for admission to hospital he had been suffering from what he had been told by his former medical attendant was intermittent fever of the quotidian type, each paroxysm followed by great elevation of temperature. Upon examination I found the following symptoms present: Pulse 105 and feeble; temperature, 100°; bowels constipated; urine high color and scanty; skin very yellow and dry; tongue dry and furred; complained of severe pain over epigastric region, with some dizziness and cephalalgia; nausea present part of the time; appetite poor; the line in percussion was found to be hard and covering a much larger region than normal; other organs apparently healthy. I at once diagnosed intermittent fever, and ordered hydrarg. chlor. mite, pulv. ipecac. et opii, āā gr. x, quinia sulph. gr. xv, to be divided into three powders, one every three hours, followed by a good dose of ol. ricini in seven hours.

11th.—Found the patient much relieved; bowels moved well, but stools were still inclined to be clay color, showing a deficiency of bile; appetite somewhat improved; temperature 99°, pulse 100 and stronger; tongue showing more moisture. Ordered stimulating diet with alterative doses of mercury with Dover's powder. This being chill day, ordered xx grs. quinia at 9 A. M.

12th.—Still improving; no chill on the day before; appetite still better; kidneys acting well; pain over region of stomach present, with some nausea; skin not so yellow and dry.

16th.—Pulse 80, temperature 98½°; bowels active; skin moist, but still some jaundice present; urine normal; appetite good; sleeps well, and says he feels like another man, with the exception of some pain in the epigastric region, which is of an intermittent character, dull and gnawing. On the 25th dismissed him, but still complaining of pain and nausea, though he was able to go to work. I did not see him again till April 25, 1879, when I was called to go out in the mountains to see a man that proved to be my old patient. Found him just recovering from a severe chill, with great increase of temperature; found about the same symptoms present as when I first saw him, with few exceptions; he was vomiting frequently, with severe lancinating pain in stomach; the ejections from the stomach consisted of partially digested food, followed with dark grumous blood; also hæmaturia was present; urine very scanty and of high specific gravity. I then made up my mind that I had to deal with a malignant growth in the stomach. My treatment, however, was about the same as at first. I heard from him several days afterward that he was still improving. On June 8th I was again called to see him, and found him struggling with a severe chill and vomiting blood; was told that this had been the case for several days before; he was also passing blood with his urine; had not eaten anything for two days; said that all kinds of food were loathsome to him; skin very dry and yellow; pulse feeble and frequent; features pinched and haggard; ordered bismuth, ipecac, and calomel in anti-emetic doses, with morphia to relieve pain.

9th.—Symptoms about the same; growing weaker all the time; nothing would remain on the stomach; very thirsty, drinking and vomiting incessantly; hæmatemesis and hæmaturia still present; ordered beef tea, *per rectum*, with morphia hypodermically; he remained in this condition till June 10th, when death occurred.

Autopsy fourteen hours after death: Found the body very yellow and emaciated. On opening the abdomen discovered large quantities of coagulated blood in the cavity, with a large fungous mass occupying the position of the duodenum, which proved to be a schirrous cancer, extending from the pylorus to jejunum; upon section found a stricture about midway, which would hardly admit a large quill; the mucous membrane was softened, and covered with a gelatinous mass. The stomach, with the exception of the cardiac end, was apparently healthy, partially filled with a dark grumous mass of blood and purulent matter; the cardiac end was somewhat congested and softened. The liver was enlarged and weighed 5¼ pounds; the hepatic cells filled with bile which flowed freely upon section; the gall bladder was dilated, and filled with bile; the duct contained a calculus about as large as a medium-sized plum, one inch from its opening into the duodenum; from that point to the bladder, its diameter was increased to nearly three times its normal size; bladder contained some blood, but the whole urinary tract was apparently healthy; the spleen was atrophied; about half the omentum seemed to be the only part that had been affected by this cancer; this contained a place about the size of the palm of the hand, which was involved. The hæmorrhage was evidently caused by the ulceration of some of the mesenteric arteries.

I am at a loss to explain the cause of hæmorrhage from the bladder. The frequent chills occurring in this case must have been from the latent effect of malarial poison, for we never witness a case of intermittent fever here except in those who come here with it.

II.—*Rupture of the Non-Pregnant Uterus.* By R. H. Sabin, West Troy, N. Y.

August 26, 1878, Mrs. R., aged forty-six years, the mother of eight children, the youngest near four years old, called at my office, and complained of sickness at the stomach and occasional vomiting; no pain; bowels regular. She asked me if I thought she was pregnant; said she never felt like that when in that way; had been regular up to within three months; had no leucorrheal discharge; had never had any uterine disorder. Gave her saccharated pepsine, and told her to call again.

She came on the 28th; said she was no better; also on the 30th, with the same remark. I prescribed again, and told her I would call at her house in two days. Called, and found her no better. I told her I thought she had uterine irritation, and that the vomiting was sympathetic, and that I would call in two days and make an examination. On the morning I was to call she sent me word not to call, as she wished to call some one else.

I heard no more of the case till the 4th of October. Her husband called about 5 o'clock A. M., and wished me to see his wife as soon as possible, as she was flowing profusely. On arriving at her bedside, I found her faint and almost pulseless from loss of blood. Gave her Squibb's fluid extract of ergot, removed the clots, which I examined closely, but found no fœtus or placenta. Saturated cotton with tannin, and applied to the mouth of the uterus, which seemed to check the flow for a while. She was in no pain, but very faint; gave brandy freely; staid with her about two hours, and left to call again in three or four hours.

When I called again I learned she had been under the care of a worthy physician of Troy, who was sent for before I was, who very fortunately arrived soon after I did. We found her still flowing, though not so freely as at my former visit.

After removing the clots and again placing cotton with tannin next the uterus, we plugged the vagina full of strips of muslin wet with cold water. This checked the flowing; continued the ergot, and gave brandy freely.

During the day she rallied somewhat, but continued very weak and prostrated, and vomited if she got too much on the stomach.

Saturday, the 5th. No particular change took place; drew her urine; there was no flowing.

Sunday morning I was called about 5 o'clock; found her in great pain across the lower part of the abdomen. Gave a hypodermic injection of morphine; removed the tampon, and drew the urine, which relieved her somewhat. Met the attending physician at 11 o'clock A. M., when we found her past all help. She died about 3 o'clock that day.

Post Mortem twenty-five Hours after Death.—Body well preserved; skin very pale; the cuticle gives away on a slight pressure of the finger; abdomen distended with gas; uterus about as large as it would be at four months in pregnancy, with a rupture across the fundus from right to left, opening into the peritoneal cavity. There was no blood in the peritoneal cavity, and but little pus. All the other organs were normal.

I learn from the attending physician the following facts:

Mrs. R. called on him in the early part of September; complained of sickness at the stomach and vomiting. He diagnosed chronic gastritis. Saw her several times. One day when he called he found her with bearing-down pains much like labor pains. On making an examination, he found projecting outside the vulva a polypus the size of a small fig hanging from the uterus. He took his sound to examine it, and in passing it around the pedicle it passed and fell from her. There was no hemorrhage; the uterus seemed to require no treatment, and was let alone. She improved so that she was able to attend to her household duties, till on the morning when I was called as detailed above.

Now, the question naturally arises, What ruptured the uterus? and when was it ruptured?

In answer to the first question, I think the uterus was ruptured by the gas which formed in it after the tampon was introduced, and that it was ruptured on Saturday night about 12 o'clock, when she was taken with pain as described; for, when I arrived at her bedside about 5 o'clock, she said, "I feel as though I am all given way across the lower part of the abdomen."

Again, What caused the flowing?

I think, when the polypus came away, it forced its way down taking the lining membrane with it, leaving the walls thin, and an artery in an exposed condition, and that the inflammation of the muscular walls caused the artery to give way, and allowed her to bleed almost to death.

Notes of Hospital Practice.

BELLEVUE HOSPITAL.

Dr. A. L. Loomis.

Empyemia lasting Two Years and terminating in Recovery.—A young man was attacked with acute pleuro-pneumonia March 26, 1876. For the first few days there seemed to be no special indication of severity, but at the end of that time delirium set in, and continued for three weeks.

The temperatures varied from 102° to 105°. Physical examination showed marked dullness over the left chest with displacement of heart to right. The left chest measured 16¾ inches—right, 16½ inches.

A large amount of pus was coughed up, which came in all probability from the accumulation in the pleura. Aspiration was performed July 5th, and one quart of pus obtained. It was repeated in a few days, but the exhaustion caused by the operation was so severe that it was discontinued. The patient began to sink, and he was removed to Morristown, N. J. The change of air was beneficial. He was again seen three months afterward, and aspirated to the extent of 1½ quart. Improvement again took place and lasted for three months, when he was again aspirated and about the same quantity of pus removed. Some time subsequently an incision was made in the chest wall, and a drainage tube inserted and retained in position. Two years from the beginning of the disease a cure was effected.

The point of interest was that it was a case of acute suppurative pleuritis, in which there seemed to be an arrest of the disease at different times, but after exposure or exertion a relapse occurred.

ST. FRANCIS'S HOSPITAL.

Service of Dr. JOSEPH W. HOWE.

Ligation of the Lingual Artery for Cancer of the Tongue—Laryngotomy—Recovery.—A man, thirty-eight years of age, was admitted to St. Francis's Hospital May 10, 1879, suffering from malignant disease of the tongue. The tongue was enlarged to such an extent as to make deglutition nearly impossible and cause dyspnœa. The neighboring glands were enlarged. There was considerable ulceration around the anterior superior edge of the organ and along the floor of the mouth. Dr. Howe decided, after consultation, to tie the lingual arteries and remove the tongue. For this purpose an incision was made on each side of the neck, parallel to the hyoid bone, and the lingual arteries ligated near their origin. The operation was tedious and difficult on account of the glands of the neck being enlarged, and thus altering the anatomical relations of the parts. During the operation the patient ceased breathing several times, and seemed to suffer greatly from the effects of the ether. After the ligation of the arteries, the diseased portion of the tongue was excised. During the night severe dyspnœa came on, and, though slightly relieved toward morning, became worse during the day. It was necessary to perform laryngotomy, and, after the escape of a large amount of pus and mucus through the opening, relief followed. At the present time, two weeks after the operation, the condition of the patient is very satisfactory. There has been no return of the dyspnœa. The portion of the tongue not removed has steadily decreased in size. There is no pain on deglutition, and the strength and appetite have improved.

MOUNT SINAI HOSPITAL.

Service of Dr. A. L. Loomis.

Thoracic Aneurism—Catarrhal Pneumonia from Compression of Bronchi.—A man, aged thirty-six, was admitted to hospital, suffering from thoracic aneurism. Six months before admission dyspnœa was complained of, with cough, but no pain. On admission there was œdema of eyelids, cyanosis of the face which extended to the tips of the ears. The face had a bloated appearance. The pupils were not affected. There was no difficulty in swallowing.

Physical examination.—There was flatness of the right side anteriorly, with absence of respiratory sounds at the lower part of the lung, and tubular breathing at the upper part. There was dullness at the left apex, with bronchial breathing. The heart was in normal position. A systolic murmur was heard in the second right intercostal space. The variety of dyspnœa was that found in those suffering from mediastinal tumors, the patient sitting up and bent slightly orward. This fact, together with the œdema and lividity of the face, led the visiting physician to make the diagnosis without making an examination of the chest.

Antiperiodics.—Different substitutes for quinine have from time to time been used in the hospital, and with varying success. The tincture of eucalyptus was given, but without sufficient result to warrant its extended use. Cinchonidia has, until recently, been the remedy most commonly relied on. It has proved as reliable as quinine as an antiperiodic, but objectionable on account of the nausea and irritation of the throat which ensues. Latterly dextro-quinine has been given as an antiperiodic and as a febrifuge, in doses one half larger than quinine. It does not cause nausea like cinchonidia, and proves as useful an antiperiodic. As a febrifuge it was given with good effect in doses of thirty grains at night. In a case, previously reported, of obstinate intermittent fever, passing into catarrhal phthisis, two doses of ten grains each were sufficient to control the paroxysms of chill and fever.

Administration of Cod-Liver Oil.—In order to conceal the taste of cod-liver oil, an emulsion was made, consisting of the yolks of five eggs and four ounces of the oil. A small amount of oil of peppermint was added. The taste of the oil was completely disguised, but it was necessary to keep the preparation on the ice to prevent decomposition.

Proceedings of Societies.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, June 25, 1879.

DR. E. L. KEYES, President.

Ulcer of Stomach.—Dr. F. V. WHITE presented a specimen of perforating ulcer of the stomach removed from a woman aged 25.

The history of the case indicated gastric derangement from her thirteenth year. At eighteen she had an attack of peritonitis. Dr. White was called to see the case on January 16, 1879, in the absence of her regular attendant. At 7 A. M. she was in a feeble state and complained of severe pain over the pit of the stomach. No tenderness on pressure. At 10 A. M. there was slight improvement, but at 2 P. M. collapse occurred. Death took place at 4.30 P. M. Several hours before death there was tenderness of the abdomen.

Autopsy.—A perforating ulcer of the stomach was found near the pylorus. Old cicatrices existed over the posterior wall. There was recent general peritonitis with old adhesions.

Cancer of the Œsophagus.—Dr. R. NEWMAN presented a case of cancer of the œsophagus with the following history: A man, aged 72, came under observation during February, 1879, complaining of dyspepsia and regurgitation of food. He had been in good health till November, 1878, when he was attacked with hiccough and dyspeptic systems. On examination no tumor could be discovered. The patient lost flesh and strength rapidly, and was nourished for the last few months of his life by rectal alimentation. He died June 23, 1879. The regurgitation of food, which was referred to in the history, was not constant. There was neither pain nor tenderness at any time, nor hæmatemesis. On one occasion he regurgitated coffee-ground matter. The specimen showed the presence of a cancerous mass with adhesion of the œsophagus to the spinal column. The caliber of the canal was not much lessened by the tumor.

Microscopy of Spermatozoids.—Dr. C. HEITZMAN described the microscopical appearances of spermatozoids obtained from a man who suffered from seminal exhaustion. The man was addicted to unsexual intercourse. He ultimately became impotent and suffered from spermatorrhea. The urine contained a large number of spermatozoids which, instead of having the normal appearances of an oblong broad head, presented a head not much wider than the tail. The motion of the spermatozoids was very feeble, although the urine was quite recent. The case indicated a local exhaustion of living matter in the testicles, the result of long-continued over-production. In regard to the cause of motion in the tails, Dr. Heitzman said it was due to contraction of the living matter which builds up the head in a manner similar to that found in the cells of ciliated epithelium. Dr. Heitzman recited also a case of suppuration of, or new growth in, one of the spermatic vesicles diagnosticated by a microscopical examination of the urine, which opinion was subsequently corroborated by the attending surgeon, Dr. L. Weber. The microscope showed a large amount of pus corpuscles and spermatozoids. The latter could be traced in all stages of transition into pus corpuscles. The spermatozoids had much enlarged heads. The pus corpuscles had tails similar to the spermatozoids, and frequently two pus corpuscles were united by a tail, in the middle of which there was a granule of living matter.

Dr. E. L. KEYES said that twelve cases of chronic disease of the seminal vesicles had passed under his observation. He made out a diagnosis by allowing the patient to first pass his urine in order to clear out the bladder and urethra. He then pressed on the seminal vesicles, and when the bladder was again emptied a gelatinous mass was discovered, which contained spermatozoids entangled in the mucus. The symptoms complained of were painful ejaculation of semen, and obscure nervous symptoms. The cases proved very tedious in treatment.

Carnified Placenta or Flesh Mole.—Dr. HEITZMAN presented the placenta of a four months' fœtus in which only a small amount of the original tissue remained.

Villous Mole.—Dr. HEITZMAN also presented a placenta in which there occurred pedunculated, berry-shaped masses. Under the microscope these cysts were found to contain disintegrated blood. The placenta presented by Dr. Putnam Jacobi, and referred to Dr. Heitzman, was found to have undergone waxy change. There were protoplasmatic bodies containing scattered globules of fat, but the main change was waxy.

Destruction of Head of Femur and Acetabulum by a Bullet.—Dr. L. A. SAYRE presented an interesting specimen of disease of the hip-joint, which resulted from a gun-shot wound received in 1864. The patient was a man aged thirty-six, and entered Bellevue Hospital for treatment. During the war a bullet entered the body near the ensiform cartilage and passed downward to the thigh. An abscess formed and opened in the gluteal region. After two years it closed, but reopened and discharged a bullet and fragments of bone. The hip-joint became anchylosed at right angles to the body.

The sinuses were explored on May 24th. The patient being under an anæsthetic, a portion of the acetabulum was removed, also a portion of the head of the femur. Both were very dark, and had seemingly existed as foreign bodies for a long time. Severe shock followed the operation. Dr. Sayre called on Dr. J. W. Howe to transfuse the patient with human blood. After the transfusion an immediate improvement took place which lasted till June 1st. Pyæmia then developed, and on June 3d he died.

Autopsy.—The bullet in its course downward destroyed the head of the femur and part of the acetabulum. These parts, as before stated, remained in the sinus till they were removed at the operation. The femur was united to the os innominatum by firm anchylosis. The acetabulum was repaired by new bony tissue. The case was interesting in showing that, if an operation had been performed after the injury and the fragment removed, the patient might have had a useful limb and have been spared years of suppuration. The tissues in the pelvis, in the neighborhood of the injured bone, were matted together by adhesions.

Tænia Solium.—Dr. Sell presented a tapeworm which had been removed by a large dose of pumpkin seed and pomegranate bark.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, June 23, 1879.

Dr. A. E. M. Purdy, Vice-President, in the chair.

Treatment of Spinal Caries and Lateral Curvature by a New Paper Brace.—Dr. A. Morgan Vance exhibited to the society a method of applying a paper brace which was a departure from that of the plaster of Paris jacket. The principle consisted in the reproduction of any number of paper braces from the original plaster jacket, without having recourse to suspension of the patient. The following are the details of the procedure: A plaster of Paris jacket was obtained in the usual way and removed from the patient when sufficiently dry. It was then placed on the table and filled with plaster, and thus there was obtained a rough cast of the patient's body, which, after being smoothed off, served as the model of the paper braces. The plaster cast was first oiled and tightly rolled with an ordinary bandage; over this canton flannel was stretched, and secured at the back with a few stitches. A preparation of glue, which will be referred to again, was then applied to the canton flannel, and strips of manilla paper, one and a half inch wide, pasted on in an horizontal direction, each strip being sufficiently long to go half around the cast and overlap its fellow below. The posterior half of the cast was similarly treated. The ends of the strips overlaid each other sufficiently to give the requisite strength. Strips of hoop-skirt wire were then applied vertically, and secured in position by thread wound around. Another layer of paper strips was then pasted on vertically. The brace was completed by applying a coating of glue, and finally a roller bandage. In a few minutes the brace dried and was removed by cutting down anteriorly with a sharp knife and springing it off the cast. Perforations were made in it with a knife. After being lined with canton flannel and bound with leather, it was ready for use. The brace for lateral curvature differed only in the fact that sheet rubber was so applied internally that it made elastic pressure on the curvature. In order to do this it was necessary to build out the cast so that the paper brace would present a hollow on the side opposite to the curvature. The rubber thus was enabled to bring pressure on the curvature without any resistance other than the body.

Dr. Vance has a number of cases under treatment at the Hospital for the Ruptured and Crippled.

The formula for the glue used in the brace was white glue, 1 part; oxide of zinc, 2 parts; water, 6 parts. Dissolve the glue in the water, and add the zinc, stirring well to prevent precipitation.

Dr. **Frank H. Hamilton** considered the appliance valuable. It had the advantage of lightness.

Dr. **L. A. Sayre** thought the brace of Dr. Vance had the merit of lightness, and would be of advantage in cases of lateral curvature. In Pott's disease of the vertebræ, however, he was of the opinion that any appliance that could be removed would fail to give as good result as the plaster jacket.

There were exhibited to the Society paper braces, similar in construction, for the knee and ankle, which combined strength and lightness, and seemed to present advantages over the felt splints used for similar purposes.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, May 1, 1879.

Dr. Fordyce Barker, President.

Self-Limitation in Cases of Phthisis.—Dr. **Austin Flint** read a paper giving the result of his observation in cases of phthisis that completely recovered or ceased to advance. He held that the favorable course of certain cases was due to self-limitation of the disease, as was claimed by him in an article published in the "American Journal of Medical Sciences," January, 1858, in which there were reported twenty-four cases of recovery. During thirty-four years of observation he had collected a sufficient number of cases ending in recovery, in which there had been either no treatment or treatment that could not be considered of a curative character, to prove that the disease in certain instances might be either self-limited or non-progressive after a period. He excluded cases of acute tuberculosis, cirrhosis of the lung, and interstitial pneumonia.

Of 670 cases of phthisis, occurring during thirty-four years, 44 ended in recovery. In 31 cases the disease ceased to progress for varying periods, ranging from several months to several years. He considered the non-progressive cases as proving that the disease ended, although recovery from the lesions did not take place, and felt justified in adding both together, making in all 75 cases out of 670.

Of the 44 cases of recovery, practically no treatment was pursued in 23; and of the 31 cases of arrest, in 15 there was no treatment. In several cases of both groups there was no change in the method of life, and in a considerable number the change was not of such a character as to be important. Dr. Flint said that all of the cases referred to were reported in detail in his book on Phthisis.

In regard to the prognosis, the symptoms indicating a favorable issue were slight increase in pulse and temperature; small amount of loss of flesh, and a fair appetite; in other words, tolerance of the disease.

In regard to the lungs, the more limited the lesions, the greater the tendency to limitation; and, although there was limitation in cases of large lesions, the amount of diseased tissue did not admit of restoration.

Bibliographical and Literary Notes.

ART. I.—*The Principles and Practice of Gynecology.* By THOMAS ADDIS EMMET, M. D.

THE author of this book has been the most fortunate man in regard to gynecology in this country, and has had greater advantages, perhaps, than any one in the world. He was one of the first followers of J. Marion Sims, the father of this branch of medicine in America. From this master he acquired that knowledge and skill which have not yet been surpassed in the management of diseases of women. Being thus early qualified, he became the competent successor of Dr. Sims in the Woman's Hospital, an institution which had gained the highest reputation through the achievements of its founder. At the same time that he took the chief place in this hospital, he established an institution for the treatment of his private patients; and in these two places, exclusively devoted to the diseases of women, he has labored to the present time, in this respect a true specialist indeed. Being early placed in a position where he had patients without number under his control, and being free from the embarrassments and distractions of the general practitioner, he has had one element necessary to success—a grand field in which to exercise his talents.

When one so favored by circumstances writes a book, the profession may justly expect much of it. That Dr. Emmet felt fully equal to the task is evident from the opening paragraph of the preface: "This work is essentially a clinical digest. It includes the results of my individual experience, and aims to represent the actual state of gynecological science and art." This self-imposed task has been fully accomplished, so far as it relates to the author's own experience, and for this all praise and thankfulness; but that the work represents the actual state of this branch of science and art certainly admits of doubt.

A peculiar feature of the book, which at once arrests the attention of the reader, is the extraordinary number of tables incorporated in the text. They contain tabulated statements of thousands of cases, including nearly all the diseases and injuries known to gynecologists. Regarding these, the author says in his preface: "Their parallel, it is believed, is not to be found in the range of gynecological literature." This is doubtless true, and they contain material of rare value (to the expert in this branch of science) which will be referred to with advantage in years to come. That others will draw the same conclusions which Dr. Emmet has, from the data given in his tables, is a question. We incline to the belief that on some points they may differ. Few, if any, have had the material for such tables, and fewer still would have given the time and labor necessary for such a task. For such honest and faithful work, we cheerfully accord high praise.

There are forty-three chapters, making altogether a book of 846 pages, which is far more than can be fully managed in a brief review. We will therefore be obliged to pass over much that is well deserving of a careful notice. The first chapter is devoted to the relations of climate, education, and social conditions on development. This is made up mostly of fault-finding with the present state of this country and its people, and a gloomy prediction of degeneration yet to come, which we should be sorry to believe to be justified by the facts. Chapters II. and III. describe surgical instruments and appliances, many of them by Sims, modified by the author. Emmet's scissors and sponge dilator deserve notice, as they possess originality. His water dilator is the same in principle as Barnes's, and practically inferior to some of the later modifications of the original.

Chapter IV.—a brief one of 16 pages—contains the author's method of taking and recording histories of cases, a discussion of neatness in person and instruments, mode of examination, and the chief points in the diagnosis of almost all the diseases, displacements and flexions of the uterus, diseases of the ovaries, ovarian cysts, tumors of the uterus, extra-uterine pregnancy, pelvic hematocele and cellulitis; in short, every disease usually described in books on gynecology, except pelvic peritonitis. There are also three illustrations, one of retroversion of the uterus, one of fibroid of the uterus, and the other of anteflexion.

The next five chapters treat of the causes of disease, and the principles of general and local treatment. Under the head of "Causes of disease, reflex and direct," a number of pathological conditions are described, and are all attributed either to malformation, deranged nutrition, or injuries. The portion devoted to the principles of general treatment reads more like the details of the management of individual cases than a systematic discussion of the therapeutics of diseases of women. Here we notice little that is new, except the use of hot water, and its action in the cure of disease. For the practical employment of this valuable agent the author deserves great credit. As a therapeutist, Dr. Emmet does not impress us as taking a progressive attitude. This is evident from the following and kindred statements: "In fact, my views were formed at so early a date, that I have never applied a leech in my life to the uterus, or scarified the cervix with a view of reducing inflammation." We agree that such practice is questionable, but other good authorities have advocated it, and have sustained it by clinical observation, and, for aught that the author knows from personal experience, they may be right. It is certain that to abstain from trying any recognized method of treating disease, simply because it does not harmonize with one's own theories of pathology, is not the spirit which begets progress in therapeutics.

In this connection, some valuable information is given on "moral management and personal influence" in the treatment of nervous women with uterine disease. Those who have to care for such cases will profit greatly by the suggestions here given. In this department of therapeutics all can not succeed. The requisite knowledge may be possessed, but to exercise it with effect requires a self-confidence and commanding power which are gifts of a peculiar organization on the part of the physician. In these chapters on treatment there is so much said about pathology as to suggest the propriety of reviewing in this connection the author's views on the nature of uterine disease, a subject ever interesting to gynecologists. In place of the long list of inflammatory affections, such as acute, chronic, catarrhal, and specific cervical and corporeal endometritis, and areolar hyperplasia, given in the works of other modern authors, we find only "faulty nutrition" in the form of congestion and "congestive hypertrophy." After giving a description of congestion and the part it plays in uterine disease, the author says, "It is necessary at the outset to appreciate the marked difference between passive congestion, which is generally venous, and inflammation. These terms are usually regarded as synonymous, but erroneously so, as are many in connection with uterine disease. Inflammation can not exist without molecular death, and its products are easily recognized until absorbed. We look in vain after death for any evidence of existing endometritis, so called, or for ulceration of the cervix, as it is termed, for neither of these conditions is inflammation." He then gives the negative appearances observed *post mortem*, and says, "those conditions which are commonly held to be the direct results of inflammation are wholly due to obstructed circulation in the organs, caused by pathological processes in the cervix and neighboring parts. In this way are to be accounted for the so-called uterine hyperplasias with their attendant leucorrhœa." This is essentially the pathology expounded in 1872 by Dr. E. N. Chapman, in his work on hysterology, a doctrine which was not well received by the profession at the time of its advent, and, so far as we know, has made no converts since. It will also be seen that the author's views are in opposition to the teachings of those considered to be authorities in uterine pathology, who have described well-defined lesions of the mucous membrane and areolar tissue of the uterus, as the results of a process which the profession generally calls inflammatory. This term, applied so long to diseases belonging to the class under discussion, has the advantage of being understood, even if it does not fully define the pathological conditions, and, as congestion does not cover the ground any better than inflammation, we may as well hold to the established nomenclature until something more definite than "congestive hypertrophy" is offered in its stead. The author not only attributes the ordinary diseases to congestion, but also believes that uterine neoplasms, such as fibroids, are due to deranged circulation of the blood.

This brings us to the chapters on ovulation and menstruation, and the derangements of the menstrual function, one of the most valuable portions of the book. The tables given here afford some very interesting facts regarding the relation of imperfect development to derangements, of the menstrual function, sterility, and uterine disease. The modern views relating to ovulation and menstruation, and the pathology and treatment of menstrual derangements, are very fully discussed in a manner which invites a careful perusal, and will well repay the careful reader. At the end of the chapter on abnormal changes in the menstrual flow, there are three pages devoted to hysteria, a brief space for this interesting subject, but containing much that is peculiar and of real value to the practitioner.

The next two chapters, one on congenital absence and accidental atresia of the vagina, and the other on pelvic hæmatocele, are excellent. They are gotten up in the style of works on clinical medicine, and contain a number of histories of cases, which make interesting reading, besides affording useful information. We feel while reading that portion on pelvic hæmatocele that we have at last come to systematic writing.

After hæmatocele, pelvic cellulitis follows in agreeable order, and is fully discussed. But at the beginning of this subject we meet these statements: "Inflammation of this tissue is generally termed cellulitis, which is sufficiently accurate for all practical purposes. The terms peritonitis, meaning inflammation of the pelvic peritonæum, and parametritis, expressing inflammation of the cellular tissue about the uterus, were recommended by Virchow. But these terms, like many others in use, express a theoretical distinction only, since the difference can not be recognized in practice. At least I must acknowledge my own inability to make any distinction at the bedside. It is inconceivable that inflammation of any portion of the pelvic peritonæum could exist without involving the cellular tissue connected with it. Nor is it possible that extensive cellular inflammation could run its course without extending to the peritoneal covering which is in such close relation with it. We certainly cannot have extensive cellulitis without pelvic peritonitis, which may become general." If these statements are true, then pathologists and gynecologists, who have repeatedly described the morbid anatomy and clinical history of pelvic peritonitis as a distinct affection, must all be mistaken. Before casting aside the work of others on this subject, we may first question closely the dogma given by the author. One can not easily refuse to believe that Virchow (one of the only two authorities referred to in this chapter) and many others who have studied this affection at the *post-mortem* table could have always confounded peritonitis and cellulitis. Such competent witnesses are as likely to arrive at correct conclusions regarding the morbid anatomy of a given disease, as one who depends chiefly upon clinical investigations of the same abnormal conditions. The weight of testimony by a very large number of witnesses who are unanimous is strongly persuasive when compared with the reasons given by the author for the views which he holds. In addition to the arguments already quoted, he says, "I hold that the cellular tissue is the first and most exposed to influences exerted through the blood-vessels, and consequently it is more liable to become inflamed, just as, for instance, he who transports nitro-glycerine is more exposed to danger than he to whom it is delivered." If this were a general law in the cause of disease, then cellulitis in the abdomen would be more common than peritonitis, and inflammation of the cellular tissue of the lungs and pleuræ than pneumonia and pleurisy. The author further gives in support of his views the statistical history of 303 cases of cellulitis treated in his private hospital. They are arranged in five tables made by himself. These, however, can not be taken as evidence to prove the impossibility of the existence of pelvic peritonitis, because, had the same cases been examined by others, a different diagnosis might have been made in some of them. One thing appears to be certain, and that is, that 303 diagnoses made upon the living subject by one who entertains exclusive views on pathology do not amount to much in settling the question of the possible existence of a disease, compared with an equal number of *post-mortem* examinations, and such a number have been recorded by good authorities.

There are six chapters on displacements. The first gives the anatomical supports of the uterus and normal position of that organ, and then a description of the pelvic roof, by Savage. Downward displacements and their causes follow, versions and their causes, and finally one page on flexures. The second is devoted to the etiology and treatment of uterine versions; the third deals with pessaries; the fourth gives the etiology of flexures; the fifth the treatment of flexures; and the last takes up again prolapsus. There is not much that is new on displacements, except the method of presenting the subject matter. The surgical treatment of flexures includes the division of the cervix, and incision at the point of flexure, operations which he performs with a skill that is supreme; and we incline to believe, from reading this portion of the book, that he is judicious in selecting proper cases for this kind of treatment. This is a subject that is still under judgment among gynecologists, and the views of Dr. Emmet will have their full weight in leading to a decision. That there is room for progress is evident from the following, taken from page 351: "Since the practice of indiscriminate division of the cervix was first introduced by Professor Simpson, more malpractice has been perpetrated throughout the world in the name of this simple operation than from any other procedure known to the profession." This, we hope, is slightly exaggerated; at least the author might have made the statement more mild, in view of the fact that he still incises the flexed body of the uterus in place of restoring it to its proper position and retaining it there, as others do, with more safety to the patient, and equally good results in the way of giving relief. This failure to notice more fully the mechanical treatment of displacements and flexions may come from want of familiarity with the works of others on this subject. This we infer from the fact that a rubber disk and four block-tin pessaries, "home made," constitute his list of appliances for the relief of dislocations and flexions. This is a very limited display, compared with the number of valuable instruments, native and foreign, in use by others. For the relief of cystocele, he still commends retrenching the vagina, an operation devised by Dr. Sims, and modified by the author.

Laceration of the perinæum in its various degrees is the subject of Chapter XX. It contains a full description of the author's method of operating; and, to those who know anything of his tact and skill, little else need be said to commend this portion of the work to the profession. That form of laceration which involves the sphincter ani, and renders the subject of such injury an object of pity, has, heretofore, almost defied the surgeon. Very few, if any surgeons, could count upon success until Dr. Emmet devised his method of operating, a method based upon a clear conception of the nature of the injury, and the true surgical principles by which it can be remedied. The profession and suffering women owe Dr. Emmet an endless gratitude for his progress in this department of surgery. His description of the operation is not so clear as it might be, but when understood it awakens the highest admiration for the author's remarkable surgical talents.

The reading of this chapter excites an enthusiasm which is not sustained by the next, upon "Inversion of the Uterus." There is little in the treatment of this subject to attract the attention of those who are familiar with the works of others in the same department, excepting the practice of stitching the cervical walls over the fundus uteri to retain that which has been gained by a partial reduction. This procedure deserves a special notice, because it is of practical value, and we believe is original with the author.

Viardell's method of restoring the inverted uterus (or what we have always believed to be Viardell's) is claimed by the author as being his. We fail to comprehend the difference between the two methods, unless it be, as the author states, that he "shortens the long axis by increasing the lateral diameter; that is, I dilate the ring about the seat of the inversion by spreading out my fingers." Any one who has tried to spread the fingers of a hand that is grasped by the vagina, knows how difficult it is to do so; hence, we can not see the advantage of the method claimed by the author.

Passing over the chapter on sub-involution of the uterus, which occupies very little space, we come to "Laceration of the Cervix Uteri," which is discussed in two chapters. In point of importance this portion of the book is worth more than all the rest. Those who are familiar with Dr. Emmet's teachings on this subject need not be told of their value; and, to those who are still unacquainted with this subject as he treats it, we feel bound to say that no one has any right to practice gynecology who has not mastered all that he has set forth concerning it. The investigations of the author in this department of the pathology and treatment of uterine disease have revolutionized the whole subject. He has lifted it from the obscurity of the unknown, and placed it among the well-defined facts of science. This is the crowning work of the author's life, and stands out above and beyond all else in his book.

The heading of the next chapter is "Amputation of the Cervix Uteri," a title which does not indicate all that follows. There are several other subjects discussed, such as hypertrophy of the cervix, laceration of the cervix, and the liability of the latter to be mistaken for elongation. He states that "true elongation of the cervix does not exist," and describes a condition of the uterus in which it can be drawn down until its long diameter measures seven or eight inches, while by raising it up in the pelvis, it measures but two and a half inches—a curious telescopic condition which he disposes of by saying, "of the precise character of which, I must confess my ignorance." After having read Schroeder's chapter on hypertrophy of the cervix uteri, Dr. Emmet's statements strike us as very extraordinary. Regarding amputation of the cervix for anything except malignant disease, he says, "I advance the statement without qualification that this operation, as at present applied, is to a greater extent a malpractice, and is attended by more evil consequences than any other procedure now resorted to in this branch of surgery." This is almost exactly what he said about division of the cervix uteri for flexion. This and other statements in this chapter are open to criticism.

Cancer of the uterus, vagina, rectum, and external organs is the subject of Chapter XXV. The various forms of cancer are classed as follows: Epithelial cancer, sarcoma, and corroding ulcer. The first form is again subdivided: "Epithelial cancer is found under two forms, epithelioma and carcinoma. It springs from the mucous membrane on the cervix, or from the canal below the internal os," and the distinction is explained as follows: "Carcinoma begins essentially in the same manner on the epithelium of the uterine canal, but spreads in the opposite direction from epithelioma or papilloma, by sinking its club-shaped roots deep into the connective tissue, which they force apart and destroy in time by pressure. Within these spaces are found small fluid accumulations, resembling pus and serum, in which are suspended broken-down epithelial and cancer cells, undergoing fatty degeneration. When these fluid accumulations greatly predominate, we have what is called medullary or soft cancer; but, if scanty, the tissues are then so dense that the disease is designated scirrhus. This term, I think, might be dispensed with. I have never met with any such condition, and regard the term as one which was in use to disguise the want of more accurate knowledge, any indurated tissue being designated scirrhus."

In discussing the etiology of cancer, there are some very interesting facts given regarding the relative frequency of cancer among women suffering from uterine disease. The author's idea of the cause of malignant disease may be gathered from the following: "Another feature, and a most important one for our present purpose, is the fact that the average number of children borne by these women is always much above the usual one. In connection with these facts I will place on record the statement to the effect that I have never known a woman to have any form of epithelial cancer of the uterus unless she had at some time been impregnated. Moreover, I believe that nearly all, if not all, cases of epithelioma, or cauliflower growth, have their exciting cause or origin in a laceration of the cervix. It springs from the effort to repair a local injury, as I have previously stated, and may develop from a recent laceration, or it may occur after change of life."

The management of this class of diseases is limited mostly to surgical procedures. After giving some brief hints about local palliative treatment of cancer far advanced, he says: "In this disease there should be no delay in operating, and the patient should always have the benefit of a doubt, and be relieved of any suspicious growth. Whenever this is limited to the cervix sufficiently to warrant the removal by amputation, it should be done with the scissors or the knife. The *écraseur* or galvanic wire should not be employed for the purpose." In cases where this method can not be practiced, he recommends the removal of the diseased tissue by the curette of Thomas, or Simon's scoop, followed by free cauterization with Paquelin's instrument.

There are three chapters devoted to fibrous growths of the uterus. The author gives the nomenclature of Virchow, Rokitansky, and Klebs, and then adds his own: "While small, such a growth may be designated a fibroid; when large and out of the pelvis, a fibrous tumor, or a fibrous growth of the uterus, without reference to the degree of development."

There are a number of tables given in the first chapter which tend to confirm the author's views regarding the causes of fibrous tumors, which are as follows: "Between the ages of thirty and forty years, the unmarried woman is fully twice as subject to fibrous tumors as the sterile or the fruitful. I have already referred to this subject, when treating of the causes of disease, and pointed out that this is one of the tributes which an unmarried woman pays for her celibacy. It seems as if it were the purpose of nature that the uterus should undergo the changes depending upon pregnancy and lactation about once in three years throughout the child-bearing period, and that, if the uterus is not physiologically occupied in child-bearing, a fibroid will the more rapidly develop into a fibrous tumor as the woman advances in life. This will also be the case with the married woman who has taken means to prevent conception, as well as with her who has been sterile from some cause beyond her control, but to a less degree in the latter case. I think I have had occasion to note that the sterile woman who has earnestly wished for children does not have her liability to fibrous tumor increased by the fact of her sterility—an instance, probably, of the remarkable effect of mind upon the body. Finally, the woman who may have been fruitful in early life, but remained sterile long afterward from some accidental cause, may have a tumor developed, but is less liable thereto from having once borne a child."

To comprehend this, it is necessary to recall the author's distinction between a fibroid and a fibrous tumor, which is given at page 85: "It is necessary to make an explanation of the difference between a fibroid and a fibrous tumor. A single or isolated fibroid may become established in the uterine wall of a sterile woman, acting mechanically as the cause of her sterility, or her sterile condition may have resulted from some other cause. But, from the fact of her being a wife, such a growth will be held somewhat in check. The unmarried woman, however, leading a life contrary to the design of nature, can have no outlet for the nerve force which is being constantly directed to her uterus. She may have a fibroid developed because she has never been impregnated, but without the advantage of the sterile woman, with whom the superfluous nerve force may be partially spent in sexual intercourse.

Therefore, in the unmarried female the whole force of this state of perverted nutrition is directed to the growth of a fibrous tumor, which we may consider for our purpose to consist of many fibroids."

We may pass over the remainder of this subject, only noting the author's method of treatment. "For the relief of a large number of these cases, it has been my practice to excite uterine contraction by making traction on the growth in the direction of the uterine outlet. This action I have continued until the tumor becomes pedunculated, from being crowded out of its bed by muscular contraction closing in around and behind the mass."

Chapter XXX. begins with diseases of the external organs of generation, and ends with "certain conditions of the mucous membrane covering the cervix, and of the membrane lining the uterine canal." The first portion does not present all the diseases of this class, but some interesting cases are given which illustrate the author's practice. Of the eight pages devoted to the mucous membrane of the uterus, four are occupied with the diseases of the cervix and cervical canal, conditions which are either inflammatory or the results of inflammation, idiopathic or traumatic. The remaining four pages relate to diseases of the lining membrane of the uterus. Those mentioned are retained small portions of placenta which become organized, and fleshy granulations or fungosities. For the treatment of these conditions he recommends curette forceps "to remove the growth entirely, leaving a healthy surface exposed." Regarding the curette he says: "Récamier devised the curette for the removal of these growths, an instrument which has proved a most objectionable one. The same instrument has been modified by Simpson, Simon, and Sims, without removing the objectionable features. As regards the instrument of Dr. Sims, I honestly believe that the ingenuity of man has never devised one capable of doing as much injury and as little good."

There are four long chapters on vesico- and recto-vaginal fistula. These are taken mostly from the author's former book on these subjects, a work which is too well known to the profession to require any notice here.

This brings us to a new feature in a work on gynecology, viz., diseases of the urethra and bladder. We have long observed the absence of these important subjects in kindred books, and greet this new departure with sincere pleasure. The author has accomplished some brilliant triumphs in this department of practice, such as the cure of cystitis by establishing a vesico-vaginal fistula for permanent drainage. This and many other contributions to the subject will be duly appreciated by the profession, and deservedly so.

The concluding portion of the book is upon diseases of the ovaries and ovariotomy. Through the labors of Peaslee, Atlee, and Wells, these subjects have taken such a position in medical literature as to preclude the necessity of noticing the little that is said of them in a work like this.

Taken as a whole, we regard Dr. Emmet's work as one of great value to the profession, but it is not a book to be read lightly. The author's style is not always clear, nor is his arrangement the best that could be devised for enabling the student to master what he has to teach. To the thoughtful practitioner who has already had some experience, to the earnest student of gynecology, and to those who may write upon the same subject in the future, the work will prove of lasting value and interest.

ART. II.—*The Transactions of the American Gynecological Society.* Vol. III., 1878. Illustrated by three Lithographs. Boston: Houghton, Osgood & Co. pp. 472. 1879.

THAT it should take nine months to print and bind a volume of 450 pages is certainly remarkable. So much was said in regard to the lateness of the appearance of the previous volume that we confidently expected that January instead of June would see this one placed on our table. But in this, as in other things connected with the book, we were doomed to disappointment.

Surely if the society expects its members to give it their best work, it must take some way of having the results of the work published before it is old and stale. In no other class of literature is freshness so essential, and men can not be expected to give their best efforts to be buried for nearly a year in the composing room.

The president, Dr. Peaslee, having died just previous to the meeting, Dr. Goodell, of Philadelphia, the first vice-president, was called to the chair. His annual address, like everything which comes from his pen, is replete with interest. His object is to show the advantages which may be derived from the treatment of certain cases of womb disease by the rest treatment of Dr. Weir Mitchel. We have noticed, and have heard the same observation from others, that the reputed cures by this treatment are often not permanent. We should be glad if Dr. Goodell would make a supplementary report at the next meeting, on the cases mentioned by him, as to this point.

Dr. J. C. Reeve reports a case of rupture of the perinæum without implication of the vulva. Such an accident, especially in a multipara, is rare. Dr. Reeve has collected a number of cases, and gives a full bibliography of the subject.

Dr. J. Marion Sims contributes a paper on "Stenosis of the Cervix Uteri." In this he gives the history of the operation called by his name, as well as his present method of operating. The bilateral operation, however done, Dr. Sims holds, is Simpson's operation, and the antero-posterior is his, whether done by knife, scissors, or uretrotome. Simpson's operation, he holds, should only be done when the intra-vaginal portion of the cervix is normally developed; while his is applicable to cases of flexion of the cervix in which the intravaginal portion is unequally developed. At present he adopts a compound of cutting and forcible dilatation. He has had but two deaths in nearly a thousand cases. There is nothing new in this paper, but it contains a good digest of the views on this subject held by this distinguished authority in gynecological matters.

The cases of Drs. White and Johnson have a certain amount of interest, especially the latter, and would have looked very well in the pages of a journal, but in the transactions of so great a society they seem rather out of place. Dr. Johnson makes some remarks about the advantages of the early application of the forceps.

These remarks are very aptly reënforced by Dr. Emmet in his paper on the "Necessity of Early Delivery as Demonstrated by the Analysis of One Hundred and Sixty Cases of Vesico-vaginal Fistula." In this he shows conclusively that it is not the forceps which make the fistulæ, but the want of them. The old-school opponents of the forceps are becoming fewer and fewer; but to such as are left this paper should give much food for reflection. Dr. Emmet's paper would have been more interesting if we had not previously seen the substance of it in his book.

Dr. Wilson, of Baltimore, recommends the hand as a curette in postpartum hæmorrhage; and gives a case to support his practice. Exactly what he expects to scrape out he does not make very clear.

Dr. Penrose gives us a charmingly original paper, the object of which is to advise the use of rags dipped in vinegar for the cure of this same condition. In the long and rambling discussion which followed, the suggestion of Dr. Penrose seems to have been lost sight of. Vinegar, as a styptic in postpartum flooding, was recommended and used, at least as far back as 1829, by Dr. Gooch, and is mentioned by Leishman and other standard authorities.

Dr. Byford reports some ordinary cases of "Dermoid Tumors of the Ovary," and then gives a statement of the generally received views on their pathology. The paper is not of striking interest.

Dr. Richardson, in his "Contribution to the Study of the Treatment of the Acute Parenchymatous Nephritis of Pregnancy," has certainly made a good point. Much of the late discussion on the treatment of this affection might have been saved by a due consideration of his views. He holds that it is the amount of urine passed in the twenty-four hours which is the index of the danger to the woman and not the percentage of albumen. Why so sensible a suggestion has not been acted upon before is hard to understand.

"Alternating Anterior and Posterior Versions of the Uterus," by Dr. Busey, is called out by a case which the doctor succeeded in relieving by Goodman's pessary.

Dr. Garrigue's paper on "Gastro-Elytrotomy" has a very familiar air, and seems to be an abstract of a paper previously published by the author. It called forth a short discussion by Drs. Barker, Thomas, Byford, and Bozeman, in which nothing particularly new or interesting was brought out.

Dr. A. H. Smith enters a vigorous protest against the "Pendulum Leverage of the Obstetric Forceps," following the lead of Matthews Duncan. He seems to have common sense on his side.

In the paper entitled "Rectal Alimentation in the Nausea and Inanition of Pregnancy," Dr. H. F. Cambell advances the idea, with a very considerable number of facts to support him, that when rectal injections of nutritious substances are given, a reversal of the peristaltic action takes place and the injected substances are "inhausted" up into the small intestines.

The application of this method of treatment to cases of uncontrollable vomiting of pregnancy is a very important step, and we gather from the medical journals that the suggestion has already been acted upon. The remaining papers were read by title only. Dr. Parvin gives the history of "Three Cases of Rupture of the Uterus." He puts himself on record as favoring laparotomy in cases where the rupture is high and proper drainage can not be secured through the retro-vaginal rent. We question, however, whether even this case should be an exception, and should prefer to open the abdomen and clear out clots, etc., in any case of rupture wherever situated.

Dr. A. Reeves Jackson discusses "Some Points in the Treatment of Sterility." The last point which he makes among the causes of failure is want of persistence in treatment. This has not often been a cause of failure in our experience, for this class of patients are the most persistent in their efforts to get relief of any which we commonly meet. Some of his points are well taken, as, for instance, "The general adoption of a physical theory of sterility, resulting in an undue reliance upon an exclusively mechanical and surgical treatment."

Dr. Van De Walker gives some very good points in the "Treatment of Pelvic Indurations and Adhesions." Postural treatment with motion, viz., *swinging* in a hammock, he finds very beneficial in the old chronic cases in allaying the pain which comes on from time to time. It has the merit of being novel at least and easy of application. Electricity, also, he finds to give very good results, both in controlling the pain and in causing absorption of the mass. The chloride of ammonium he recommends whenever there is present a certain amount of inflammatory hyperæmia more or less active. Its operation, he thinks, is due to a modification of the circulation of the parts. Careful handling of the pelvic mass tends to remove tenderness. For this purpose he employs bimanual manipulations. The paper is very suggestive and will well repay reading.

Dr. Isaac E. Taylor reports a case of extreme anteversion and anteflexion of the uterus at the full term of pregnancy, and also gives a long paper on early delivery of the placenta when prævia, with the relation of a case of spontaneous separation of the placenta without hæmorrhage. In this he insists once again on his views concerning the physiology of the cervix. The paper is too long to permit of our giving any analysis of it here. It is accompanied by three lithographs of specimens of the pregnant uterus.

But one new member was elected at this meeting, and his paper for admission comes last. If this paper is up to the standard required of candidates, that standard must have been sadly lowered since it was defined by Professor Barker in his annual address in 1876. The paper, as far as can be gathered from reading it, is a weak attempt to disparage Dr. Emmet's operation for laceration of the cervix uteri, and to bring into notice a new form of pessary, "constructed upon the principle of the parallelogram," whatever that principle may be. It has a framework of steel wire covered with soft rubber, and upholstered with horse-hair. Of all the pessaries we have seen or heard of, this one is the most unscientific and objectionable, and combines in the highest degree all the qualities which a good pessary should not possess. We have seen and examined it outside the vagina, where we think it should remain; and we have seen and smelled it just after its removal from the vagina. We can safely say that it needs only to be smelled to be appreciated. It has certainly been invented half a century too late. A noticeable feature of the paper referred to is the very frequent use of the term "bloody operation," which is not only wholly superfluous, but to many English readers repulsive and misleading.

Memoirs of Drs. Peaslee and Atlee complete the volume. There is also the usual complete bibliography of obstetric literature for the year, a feature which adds much to the value of the transactions.

On the whole, we have been disappointed in this issue. It certainly is not up to the standard of the first two volumes. We miss very much from the list of contributors the names of Peaslee, Barker, Byrne, Noeggerath, Thomas, and Elwood Wilson. We would suggest to the society that perhaps the infusion of a little younger blood, which was so carefully kept out at the last meeting, might have an exhilarating influence. From a society of this kind, which has arrogated to itself a very high position, we have a right to expect the very best kind of work. If the society wishes to keep the position which it now holds, its managing officers must look to it that the meetings do not drag, and that the standard of the papers is not allowed to fall too low.

ART. III.—*Hand-Book of Diagnosis and Treatment of Diseases of the Throat and Nasal Cavities.* By Carl Seiler, M. D., Lecturer on Laryngoscopy at the University of Pennsylvania, etc. Philadelphia: Henry C. Lea, 1879.

WE fail to see any necessity for the labor which Dr. Seiler has expended on his so-called hand-book; it certainly fills no want felt in the literature of the subject, for all that it treats of is comprehensively considered, and, we must add, better and more clearly stated, as far as the student is concerned, in several standard works within the reach of all practitioners, two new editions, one American and one English, only lately appearing at the same time as this work.

The author intends, he tells us, to furnish the student with a guide to acquiring skill in the diagnosis and treatment of throat diseases. Granting that skill may be acquired from the pages of a book, it can only be theoretical, one practical demonstration being worth pages of theory. We question whether his explanations of the technical details of manipulation, or superficial description of pathological appearances, will be of great assistance, and know that much of what we read is directly misleading. It is claimed further for the work that all theoretical considerations have been omitted from its pages; but it would have been better, perhaps, in certain instances, instead of assertions which seem dogmatic, to have given, upon points which are still in dispute—let us instance tubercular laryngitis—the views of authorities to a limited extent. Again, only points of practical importance, it is claimed, are discussed; but we find space taken by a description of Wright's electric apparatus for keeping the temperature of the laryngeal mirror elevated—only a curiosity; a paragraph on illumination by transparency, seldom if ever employed, an account of the "Schüster Kugel," as a light concentrator, an obsolete method, except in Stoerck's clinic, and several other matters which are certainly not practical and which, in a hand-book professedly concise, seem out of place; finally, as a ready book of reference on the subjects of which it treats, it is too limited in scope and superficial to be an authority. The student can and will always turn for reference to larger and more comprehensive works, where he will be more likely to find what he wants.

In support of these criticisms details are necessary and proof, both of which are readily found in the pages before us. The student is advised to wear the reflector upon the forehead instead of over the right eye, as is almost universally taught; in the latter case vision is *not* monocular, if the mirror be of the proper size, and there is no question but that the method is theoretically the correct one; practically it has long been found the best. Again, the lamp giving the source of light is *not* placed to the left of the patient, but to his right, for manifest reasons, when the direction of the light rays to the forehead mirror are considered. Dr. Seiler's description of the method of arranging and using the forehead mirror would lead us to believe him unfamiliar with it did we not know to the contrary.

Should the student be told, when using the spatula, "to introduce it into the mouth as far back as possible," will not ninety-nine out of a hundred patients retch, if it be so introduced? In rhinoscopic examination should not the spatula be used to depress the tongue, rather than the mirror itself? Why tell the beginner that a complete view of the posterior nares can only be obtained in *cases of cleft palate*, when he will find case after case with intact palate, in which he can gain a complete and satisfactory view of all parts at one time? Regard for space requires us to pass without comment, though we have marked some passages, Chapters IV. and V., and we pause again at the author's description of acute laryngitis, to say that it is one of a *severe case* of the disease, and not one as ordinarily seen (page 59). Ulcers, we are told, rarely form in this disease; but superficial ulcers or, perhaps better, excoriations are, Dr. Seiler to the contrary notwithstanding, not at all unusual in acute laryngitis, and laryngeal abscess, often met with, according to him, is certainly, in our experience, a great rarity.

Simple chronic laryngitis, by far the commonest form of throat affection, is accorded but two pages of the book. We do not approve of including, though it is often done, the laryngeal manifestations of syphilis and tuberculosis under the head of chronic laryngitis, or as forms of that disease; it is certainly misleading to the beginner, who will obtain a much better idea of them, varying as they do so markedly in pathological appearances, symptoms, etiology, and treatment, if they be considered as separate and distinct affections.

It may be that in the advanced stages of tuberculosis we shall find "tubercular deposits in the mucous membrane of the larynx;" we have never as yet seen such a case, and believe them to be very rare, an opinion shared by the majority of writers of to-day. Still they may occur; the question is an open one; but should the student not be informed of this? The peculiar pyriform swelling of the arytenoid cartilages he will likewise see in a large percentage of cases of so-called tubercular laryngitis, and will find it alluded to as characteristic in the majority of works on the subject, though Dr. Seiler tells him that it is not mentioned in any of the books. Will it not likewise mislead him—and it is for the student again, be it remembered, that the book is intended—to tell him (page 71) that syphilis is one of the most common causes of chronic laryngitis, and that *deep* ulcerations may be found almost anywhere in the larynx? Considerable doubt may also be expressed in regard to the statement that syphilitic gummata are rarely seen in the larynx, and that neoplasms of benign and malignant nature are frequently met with. The chapters on the various forms of pharyngitis come next in order; and though the classification is somewhat involved, follicular and granular pharyngitis being considered as separate diseases, a description of pharyngitis sicca being found under the head of chronic pharyngitis, etc., the description is in the main good. And upon page 86 is found a very interesting exposition of certain theoretical causes of granular pharyngitis, taken from Seiler on the "Voice in Singing." Passing over the chapters on coryza, and post-nasal catarrh, which contain nothing new, and some things that are obsolete, we pause again for a moment to advise the neophyte *not* to cut off the uvula as "near the root as possible," if he is called upon to do the operation; it is not necessary and may modify the voice.

From this point on the little book increases in interest; the chapter on functional disorders of the larynx, and that on neoplasms of the laryngeal and nasal cavities are clear, concise, and to the point, the statements, as a rule, not being open to criticism. The work ends with a table of symptoms of diseases of the larynx, modeled after that in the work of Lennox Browne, and one of the symptoms of diseases of the naso-pharynx, followed by a *very* "short list" of books of reference.

We have, at the beginning of this notice, recorded our personal opinion of the merits of Dr. Seiler's work, and have aimed throughout it to give such selections, necessarily few, as would enable those who read what we have written, to intelligently judge whether or no our opinion was justified. The book is one that the specialist who aims at attaining a complete library will want; but it can not be heartily indorsed as one fitted for the student or beginner in the art, unless he be of very restricted pocket, when the question of cost will be one for consideration, over larger and more expensive works. G. M. L.

ART. IV.—*Health Primers:*

No. 1. *Exercise and Training.* By C. H. RALFE, M. D. 16mo, pp. 96.

No. 2. *Alcohol: its Use and Abuse.* By W. S. GREENFIELD, M. D. 16mo, pp. 95.

No. 3. *The House and its Surroundings.* 16mo, pp. 96.

No. 4. *Premature Death: its Promotion or Prevention.* 16mo, pp. 94. New York: D. Appleton & Co., 1879.

THESE "Primers," the first issued of a forthcoming series of fifteen on kindred subjects, are evidently intended for popular use. Although written from an English stand-point, they are quite as applicable to the wants of this country.

In Primer No. 1, on "Exercise and Training," especially valuable suggestions are made concerning the exercise for girls. Minute rules for exercise, intended to apply to all circumstances, also rules for the employment of food, are given. The great yield of force obtained from fatty food, as compared with other kinds, is made apparent.

In Primer No. 2, alcohol is discussed in all its bearings: its physiological action is clearly and concisely put, and the indications for its employment are in the main safe to follow.

In Primer No. 3, the hygiene of the house, including soil, drainage, construction, ventilation, heating, laundry, etc., are all considered. Very excellent remarks are made upon the difficulties of dealing with slop-water.

In Primer No. 4, premature death is considered as comprehending all deaths except such as occur from old age. Of the causes of premature death tables are given including eleven classes. It is shown that in infancy diseases of the nervous system rank first among the causes of death, diseases of the lungs second, and the diarrhœal diseases third. In childhood and youth (1 to 15 years), the infectious diseases rank highest. From youth to maturity (15 to 55), lung diseases show the highest mortality, of which phthisis ranks the highest of any one affection. During the decline of life (55 to 75), diseases of local origin take precedence. "The conditions under which the causes of death operate" are discussed at length, and the elimination of conditions favorable to the development of the numerous family of diseases is fully given.

We regard this series, so far as published, as not only practical and readable, but thoroughly scientific, and of great value to the people. It is to be hoped that these primers may gain access to multitudes of families. A list of contributors to the series, all of whom are prominent men, is given on a fly-leaf of each volume. The American edition is neatly bound.

ART. V.—*Lectures on Syphilis of the Larynx. Lesions of the Secondary and Intermediate Stages.* By W. McNeill Whistler, M. D., M. R. C. P. London: J. & A. Churchill, 1879.

When we read recently, in the pages of the "London Medical Times and Gazette," Dr. Whistler's very valuable lectures on "Syphilis of the Larynx," we, with many others, expressed the wish that they might be made generally and conveniently available, by reissuing them in book form. The present handsome little work, unexceptionable in paper, type, and general make-up, is therefore welcome, and is worthy, we may add, to find a place in every laryngological library.

The study of laryngeal syphilis is recent when compared with the investigations that have been made into the manifestations of this disease in other organs, and there has existed, as Whistler truly says, until but a comparatively few years ago, a very uncertain opinion as to the lesions most commonly met with there, especially such as are connected with the early periods of the disease. The author's efforts to keep clear of this uncertainty are, therefore, a step in the right direction, and one that will be of great assistance to those who, and they are of necessity many, may follow in his footsteps. The author has confined himself entirely to a description of the secondary and intermediate lesions of syphilis as they affect the larynx. It will be remembered that the laryngeal signs of the disease are subdivided, as a rule, into secondary and tertiary, but between the two extremes, as all who have worked on the subject know, there exists an important class of cases quite distinct from the deeper lesions of the tertiary stage; the above-named subdivision is therefore preferred by Whistler, and we agree with him that it will not be found an artificial one in practice. The first lecture in the volume before us deals with the earliest manifestations of syphilis in the larynx, and contains much that will not be found elsewhere: the second, with the relapsing, ulcerative laryngitis of the earlier and intermediate periods. Both are clear, concise, and well written, and will prove a valuable contribution to our present knowledge regarding the earlier laryngeal manifestations of the disease in question.

ART. VI.—*The Anatomy of the Joints of Man.* By HENRY MORRIS, M. A. M. B. Lond., F. R. C. S., Senior Assistant Surgeon to, and Lecturer on Anatomy and Demonstrator of Operative Surgery at, the Middlesex Hospital. Philadelphia: Lindsay & Blakiston. 1879.

WE quite agree with the opinion of the author, expressed in the preface, that a book of this sort is needed. The anatomical text-books do not consider these structures fully enough in the light of their relations to vessels and nerves, and the action of all the muscles which surround them; and most treatises neglect those important structures, the bursæ, while describing the ligaments and synovial membranes. Mr. Morris has attempted to supply these deficiencies and to produce a thorough treatise. The book is a handsome octavo volume of four hundred and fifty pages. Chapter I. deals with the individual structures which enter into the construction of a joint; chapter II. describes the varieties of joints, and the following chapters (twenty in all) are devoted to the joints of the different regions. In each case the description begins with the articular ends of the bones forming the joint, that of the ligaments and synovial membranes follows; then the movements are dwelt upon, and finally the muscles, arteries, and nerves, and the bursæ, are given in detail. The writer seems to have based his text upon his own dissections, and to have had his illustrations made from them, except in the case of the bursæ, which he has borrowed from Monro's work. The latter circumstance is to be regretted, for the drawings have been reduced in size, and hence lack clearness. The author's own plates are creditable, but they are rather unevenly distributed. There is, for instance, for the wrist-joint but one plate, which represents a section showing the synovial cavities of the wrist and hand. For the knee-joint, on the other hand, there are six or eight plates and three wood-cuts. The text is good, the author's style being clear and interesting. The mechanism of the movements and the action of muscles is especially full and accurate. Altogether, the book reflects great credit on its author, and can be fairly considered a valuable addition to anatomical literature.

ART. VII.—*A Manual of the Examination of the Eyes. A Course of Lectures Delivered at the École Pratique.* By Dr. E. LANDOLT, Directeur-Adjunct of the Ophthalmological Laboratory at the Sorbonne, Paris. Translated by SWAN M. BURNETT, M. D., Lecturer on Ophthalmology and Otology in the Medical Department of the University of Georgetown, and Ophthalmic Surgeon to the Central Dispensary, Washington, D. C. Revised and enlarged by the Author. Philadelphia: D. G. Brinton, 115 South Seventh Street. 1879. Pp. 306.

IN this volume the author gives a most thorough description of the methods of examining the eye. It is a long while since we have read a book so well worth reading—it is, at the same time, interesting and instructive. The subjects treated of in the course of lectures are divided as follows: 1. The objective general inspection of the eye; 2. Examination of the lids, conjunctiva, lachrymal passages, and all the other portions of the organ accessible to the naked eye; 3. Determination of the distance between the two eyes, their height and protrusion; 4. The movements of the eyes, particularly in their relation to strabismus; 5. Intra-ocular tension; 6. Acuteness of vision; 7. Refraction and accommodation; 8. Perception of colors; 9. Limits of the visual field and indirect vision; 10. Ophthalmoscopy, including the examination of the dioptric media by means of oblique light.

By this schedule of contents of the book, it will be seen that its scope and aim are only to treat of the exact methods of examination of the eye. While the subjects are treated in a masterly and scientific manner, the author has avoided the temptation of making them too strictly so. This, however, he is most thoroughly competent to do, as may be seen in his chapter on "*Metrology* of the Eye" (as he calls it), in the "Handbuch der gesammten Augenheilkunde," written in conjunction with Snellen. In this volume only those problems which are purely scientific are left out, and only such as are indispensable to daily practice introduced.

In the chapters on the refraction and accommodation of the eye, etc., all the calculations and formulæ are given in the metric system.

Just now we may be said to be in a period of transition from the old to a new system of measurement of refraction. The new system can not be said by any means to have been generally introduced as yet, but there can be little doubt that it is destined to be universally adopted. An entire chapter is given to a consideration of the differences between the new and the old systems.

The necessity of such a mode of considering the subject must be at once apparent, as we have learned the elements of optics according to the old system. Tables showing the relations between the old and the new system are introduced, and the whole subject made simple and intelligible. It would be worth while to make a more careful analysis of the different chapters, but, having given an idea of the contents and aim of the volume, we leave it by calling attention to the concluding sentences of the author's introduction, in which he says: "Of none of these things should a physician of to-day be in ignorance. You should not leave them to the study of the specialists, if you would bring to your work as general practitioners all the resources of modern diagnosis."

Dr. Burnett deserves much credit for his translation, which is done in good English, and shows an appreciative knowledge of the subjects under consideration.

ART. VIII.—*Transactions of the American Otological Society. Eleventh Annual Meeting. Newport, R. I., July 24, 1878.* Vol. ii, Part 2. Boston: Houghton, Osgood & Co. The Riverside Press. Cambridge, 1878.

THIS is the first published transaction of this Society since 1876. The meeting for 1876 was held in New York in connection with the International Otological, and in 1877, inasmuch as a constitutional quorum was not present, no regular meeting was held. So far as we recollect, this is the first time since the organization of the Society that it has failed to have a quorum. The cause of the small attendance upon this meeting, which was held at Niagara Falls, as stated by the secretary, was a general strike among the railroad employees of the country, which threatened to so interfere with travel that many members were thereby deterred from leaving home.

The volume before us shows that there was quite a large number present at this meeting, and that the proceedings were of a good deal of interest. It opens with a report on the progress of otology, which extends from July, 1876, to July, 1878. The first part of the Report on Anatomy and Physiology is by J. J. B. Vermyne, M. D., of New Bedford, Massachusetts, and that on Pathology and Therapeutics by Samuel Lexton, M. D., of New York. Both of these gentlemen deserve much credit for the complete and valuable summary of the literature of the subject which they have compiled.

To both of these reports an index to the articles mentioned in the report, arranged in alphabetical order of the authors' names, is attached. Besides these reports, there are fourteen original papers, all of which are worth reading, and some of them of a very high order of merit.

The report shows the Society to be in a very flourishing condition, and will well repay the perusal of all those who are interested in the study of otology.

ART. IX.—*Lessons in Laryngoscopy and Rhinoscopy.* By PROSSER JAMES, M. D., Physician to the Hospital for Diseases of the Throat, London, etc. Third Edition. London: Baillière, Tyndall & Cox, 1870.

DR. JAMES's useful little manual has been so recently reviewed in this Journal that an extended notice of this, its third edition, is not called for. The rapid sale of the second and the prompt appearance of a third edition justify and confirm the views expressed recently by us, as to its practical worth in its special field, and the reception that it would meet with from laryngoscopists. The present work shows that it has again been carefully revised by its author, and, though still far from perfect, exhibits, in many places, marked improvement. The chapter on laryngoscopical diagnosis, though still too meager in its details, has been considerably amplified; some new engravings have been added, which show better workmanship than the old; some of the latter, notably one on page 70, have been retained, when they ought to have been rejected; and, finally, the section on anterior rhinoscopy has been expanded. And here and there throughout the book we notice numerous additions, which add to its value as a work on laryngoscopic and rhinoscopic methods of examinations, normal appearances, operations and therapeutics. Dr. James's book may be warmly recommended as a work on laryngeal pathology and morbid anatomy; it is, for the student, practically useless. Why does not Dr. James, in a future edition, which we doubt not will be called for, enlarge the size of his page, type, etc., and thereby present us with a book which will present generally a more creditable appearance than the one before us, and more in keeping with his extended reputation?

ART. X.—*The Antagonism of Therapeutic Agents, and what it Teaches.* By J. MILNER FOTHERGILL, M. D. Philadelphia: HENRY C. LEA. 1878. 12mo, pp. viii.-160.

THE eminent writer of medicine, Dr. J. Milner Fothergill, has in this little work brought before the profession facts that medical men have long felt the need of. The first chapter is taken up with experimental inquiry, and the author gives experiments upon rabbits, etc., which are conclusive as to the antagonism existing between the various drugs used. Chapter II., "Practical inquiry."—Action of drugs chiefly as ascertained by experiments—calabar bean, chloral hydrate, morphia, belladonna, and strychnia. In Chapter III., "The rhythmically discharging centers, and the effects of drugs thereupon." Chapter IV., "Action of drugs upon the circulation," digitalis, belladonna, and aconite. The author's experiments support the claim that digitalis is a stimulant to cardiac action, and that it quiets the heart by enabling it to contract more efficiently, and therefore more steadily; that it is not a cardiac sedative, as was formerly supposed; that it produces its effects upon the heart, not by acting upon the muscular structures, but through the nervous centers, which excites muscular action. The fifth chapter relates to the "respirations," respiratory depressants and respiratory stimulants. Chapter VI., "Practical use of the antagonism of drugs in actual poisoning." The remainder of the volume is devoted to the use of antagonism of drugs in ordinary practice—circulation and respiration. We recommend the perusal of the book to the profession at large.

ART. XI.—*A Guide to the Qualitative and Quantitative Analysis of the Urine, Designed for Physicians, Pharmacists, and Chemists.* By Dr. C. NEUBAUER and Dr. J. VOGEL, with a preface by Professor Dr. R. FRESENIUS. Translated from the seventh enlarged and revised German edition by ELBRIDGE G. CUSTER, M. D., Physician to Out-Patients at the Massachusetts General Hospital. Revised by EDWARD S. WOOD, M. D., Professor of Chemistry in the Medical School of Harvard University. New York: William Wood & Co. 1879.

THE third edition of this book was translated by the Sydenham Society in 1863, and has since been considerably circulated in this country. The succeeding edition has been enlarged by the addition of new material, and the present volume is nearly one half larger than the former translation. It is undoubtedly, both from a scientific and clinical point of view, the most complete work that exists. It is divided into two parts. The first, by Dr. Neubauer, Docent in the Chemical Laboratory in Wiesbaden, treats of the chemical qualities of the urine in health and disease; the second, by Dr. J. Vogel, Professor of Medicine in the University at Halle, considers its conditions in their clinical significance. The former makes the larger part of the volume, which contains 540 pages, with four pages of lithographic plates. Both parts are unusually full and exhaustive. The clinical part will repay careful study by every practitioner, and is to be warmly commended. The chemical analysis contains many details that will interest and be appreciated by the pharmacist or chemist only, but is none the less valuable for reference to the physician. The translator has had a difficult task, it is plain to see, but he has accomplished it creditably.

ART. XII.—*Habitual Drunkenness and Insane Drunkards.* By JOHN CHARLES BUCKNILL, M. D., etc. London: Macmillan & Co., 1878. 12mo, pp. xxxii.–108.

THIS volume includes a number of letters, speeches, etc., of the author. It appears that some of these articles, which had been published elsewhere, and which reflect discredit upon American institutions for the cure of drunkenness, had invited an attack from Dr. Cameron, a member of Parliament, who had introduced a bill to establish private institutions, with authority to hold drunkards in confinement and provide means for their cure. The several articles of the author, together with a lengthy preface, are published in book form, in order to make his views more generally known.

The author believes there are insane drunkards. Cases of drunkenness occurring periodically, and attended with a uniform delusion, are victims of an abnormal mental condition, and require detention in an "insane hospital." He claims, however, that most cases of habitual drunkenness are subjects of a "vice," and the attendant diseases are a result rather than a cause of the vice. Dr. Bucknill also claims that confinement in an institution will not cure a bad moral tendency.

The same views presented as a treatise independent of the asperities of a controversy would have been quite as instructive and more interesting.

ART. XIII.—*Ophthalmic Out-Patient Practice.* By CHARLES HIGGENS, F. R. C. S.; Ophthalmic Assistant-Surgeon Guy's Hospital; Lecturer on Ophthalmology, Guy's Hospital Medical School. Second edition. Philadelphia: Lindsay & Blakiston, 1879. Pp. 116.

THIS little volume is about as poor an excuse for a book as we ever remember to have seen. In eight sections, or chapters, it treats in the most brief and superficial way of some of the diseases of the eye and their treatment. What excuse there could be for the *raison d'être* of such a book we were at loss to know. But some light has been thrown upon the author's motive for writing it by the statement of a friend, who tells us that, in beginning practice in London, a specialist must forsooth write a book, which shall be noticed in the daily press, especially the "Times."

That the book has had a certain market may be inferred from its having reached a second edition. It is a deplorable fact that such books are sought for by students who wish to learn something of a subject by an easy route, without the trouble of more careful study. We are sorry to see a book of this kind reprinted in this country. If it be true that the advertisement of publishing a book is necessary for the send-off of a specialist, let him at least write a good one. But we see no immediate necessity for a text-book of any kind on ophthalmology.

ART. XIV.—*Transactions of the American Ophthalmological Society, Twelfth, Thirteenth, and Fourteenth Annual Meetings. New York, 1876. Niagara, 1877. Newport, 1878.* New York: Published by the Society, 1878.

THE meeting of 1876 of this Society was merged into the International Congress of Ophthalmology, and in 1877, at the Niagara meeting, there was no quorum, so that there was really no meeting at which papers were read until 1878.

The volume very appropriately opens with a brief sketch *in memoriam* of the late Dr. H. Althof, who was one of the founders of the Society, accompanied with his portrait. A very large number of papers—twenty-two—are contributed by the members. Many of them are far more than the mere report of cases and show an immense amount of application and study on the part of the members.

We should be pleased to notice some of these articles and comment upon them, but refrain from doing so for fear of appearing partial. Besides, the contents of the volume have already been fully noticed in several of the medical journals. We content ourselves, therefore, by saying that the volume before us exhibits pleasing evidence of the activity of American ophthalmologists.

Art. XV.—*Essays on Surgical Anatomy and Surgery.* By John A. Wyeth, M. D., Member of the New York County Medical Society, etc. New York: William Wood & Co. 1879.

This volume comprises four essays. The first, on the "Surgical Anatomy and History of the Common, External, and Internal Carotid Arteries," was awarded the first prize of the American Medical Association in 1878. The second, on the "Innominate and Subclavian Arteries," received the second prize of the same society in the same year. The third, which treats of the "Surgical Anatomy of the Tibio-Tarsal Region," took the Wood annual prize of the Alumni Association of the Bellevue Hospital Medical College in 1876. The fourth comprises some short notes on the "Obturator Artery and the Hip-Joint." It is needless to dwell on the merit of these essays. They exhibit much research both in the dissecting room and in the library. The two former, in particular, contain the fullest summary of cases that has been made; and all are characterized by sound and forcible conclusions, with which every surgeon should be familiar.

Art. XVI.—*Health, and How to promote it.* By Richard McSherry, M. D., etc., etc. 12mo, pp. xii.–185.

For a single comprehensive work on general hygiene, within moderate limits, this one of Professor McSherry is well adapted to the professional as well as the general reader. Indeed we know of no work which we would prefer to it, for the purposes for which it is designed. It is in the form of a treatise, and thus dispenses with much of the lengthy discussion of questions which is found in special articles, yet it is so comprehensive as to include nearly every topic pertaining to the subject.

Art. XVII.—*Clinical Remarks on Gleet; its Causes and Treatment.* By J. C. Ogilvie Will, M. D., Surgeon to the Aberdeen Royal Infirmary, etc. London: J. & A. Churchill. 1879.

This is an interesting clinical lecture, reprinted from the "Edinburgh Medical Journal." The method and instruments of American surgeons are mentioned intelligently. The author is willing to admit the value of the cutting operation for stricture, but inclines to the belief that "full dilatation" is all that is required.

ART. XVIII.—*Conspectus of Organic Materia Medica and Pharmacal Botany, comprising the Vegetable and Animal Drugs, their Physical Character, Geographical Origin, Classification, Constituents, Doses, Adulterations, etc. Table of the Tests and Solubilities of the Alkaloids appended.* By L. E. Sayre, Ph. G. 8vo, pp. 220.

THE classification adopted by the author seems to be upon a botanical basis rather than therapeutical. In the text a concise description of the several plants or parts of plants used in medicine is given, including the properties and characteristics. A chart of botanic materia medica giving the doses may be found in the front of the volume; a table of alkaloids is placed in the back part of the book, which gives their tests, solubilities, etc.; also a table of incompatibles and antidotes. The work will be found convenient for ready reference by students.

ART. XIX.—*Lectures on Practical Surgery.* By H. H. TOLAND, M. D., Professor of the Principles and Practice of Surgery and Clinical Surgery in the Medical Department of the University of California. Second edition. Philadelphia: Lindsay & Blakiston. 1879.

IT is but a year and a half ago that we were called upon to notice the first edition of this book. It was then characterized as the production of "an ignorant surgeon, and a very unsafe teacher"; and our reasons for this uncomplimentary but honest statement were fully given. (*Vide* vol. xxvii, page 98.) The present edition, with the exception of an additional chapter, is apparently a fac-simile of its predecessor. Further criticism is unnecessary. We are heartily sorry for the students of the University of California, if they are encouraged to study so worthless a book.

BOOKS AND PAMPHLETS RECEIVED.—Syphilis of the Brain and Spinal Cord, showing the part which this agent plays in the production of Paralysis, Epilepsy, Insanity, Headache, Neuralgia, Hysteria, Hypochondriasis, and other mental and nervous derangements. By Thomas Stretch Dowse, M. D., Fellow of Royal College of Surgeons of Edinburgh, Physician to the North London Hospital for Consumption, Physician to the Skin Department of Charing Cross Hospital, etc., etc. New York: G. P. Putnam's Sons. 1879. Pp. 146. Price, $3.

The Future Influence of the Johns Hopkins Hospital on the Medical Profession of Baltimore. By John Van Bibber, M. D.

Reports on the Progress of Medicine.

QUARTERLY REPORT ON LARYNGOLOGY.

No. XVIII.

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2. Bowles says that to him it appears impossible to be sure, on first seeing a case of sore throat, whether it will be diphtheria or not, even indeed if there should be false membrane, and that we should therefore be careful and tentative in the opinion we give on first seeing a case of throat affection; he describes two cases, one of tonsillitis with slough, another of follicular tonsillitis, and raises some just and curious points in connection with them, asserting truly that it is of very great importance, for many reasons, to arrive at a correct diagnosis in these cases, for if it be of the infectious variety, all the questions connected with the details of isolation come thick upon us and must be dealt with.

5. The second part of Dr. Bristowe's second lecture, which will be found at the above reference, will be of special interest to laryngologists, as it deals with the subject of loss or impairment of the laryngeal voice.

8. Mr. Browne showed a patient, aged thirty-nine, at the Pathological Society of London, who suffered from this rare disease. As there was generally some difficulty in the diagnosis of these cases from syphilitic disease, Browne gave the following main points of distinction between the two affections: In syphilis there was no pain, except in swallowing; in cancer there was pain at all times. In syphilis there was no hæmorrhage; in cancer there was usually hæmorrhage at some period of the disease. In cancer, moreover, the glands became involved much earlier in the disease than in syphilis. In the ensuing debate, Mr. Parker mentioned that he had seen two cases of epithelioma of the tonsil in children.

9. In cases of tracheal syphilis which lead to stenosis of that canal, Gerhardt recognizes three stages: A first, termed irritative; a second, one of perminent stenosis; and a third, the suffocative. The second and third stages are frequently seen and a number of cases are upon record. Recorded instances of the first or irritative stage are on the contrary rare, mainly because the affection runs a latent course or causes such slight symptoms that the patients fail to consult the physician. Beger communicates in full the histories of two cases of tracheal syphilis which belong to the first stage, and are therefore of much interest.

11. Browne, in speaking of the varieties of obstructed nasal respiration, says that the condition, being one which may be produced by a vari-

ty of pathological processes, calls for both special, local, and for general knowledge alike in the matter of diagnosis and of treatment. Congenital atresia of the nasal passages, syphilitic ulcerations and cicatrices, perversion of the septum nasi from the median line due to congenital and accidental causes, neuroses and polypi, are considered in the paper before us, and a case of angular curvature of the upper cervical vertebræ forward is mentioned as a comparatively unnoticed cause of obstructed nasal respiration. The particular conditions considered in detail are those of strumous and catarrhal hypertrophy of the turbinated bones of the septum and their coverings, and of the naso-pharyngeal vascular and glandular tissue.

13. In the course of a very excellent article on laryngeal phthisis, Dr. Bosworth states that he discards the old teaching that the affection is a manifestation of tuberculosis, but considers it a separate and distinct disease, manifesting symptoms and appearances which he very clearly and concisely describes in his paper, and into which a simple laryngeal catarrh may develop, provided there exists the additional impulse toward it of a markedly depraved condition of the general system due to the tuberculous, scrofulous, or syphilitic diathesis, malaria, anæmia, Bright's disease, or any of the blood-conditions which weaken the resisting power of the system. The deduction is obvious; if in any of these conditions subjective symptoms arise of laryngeal trouble, it is of the highest importance that a most careful examination be made and the case watched with additional care; if nothing more than laryngeal catarrh exists, it should be treated by measures especially directed to the parts, in addition to the measures resorted to for the correction of the general habit—for there can be little doubt that there is an additional danger in the catarrhal inflammation of the development of the disease. If there exists the condition described as characterizing the first stage of laryngeal phthisis (pyriform thickening of the mucous membrane covering the arytenoid cartilages and the inter-arytenoid commissure), there is all the more reason for instituting immediate measures for arresting its further progress. Treatment consists of four steps, as follows:

First. Thorough cleansing of the parts preparatory to the more special application.

Second. The application of such mild astringents, alteratives, or resolvents as may be indicated.

Third. The application of an anodyne to relieve pain or irritability, and to correct any irritation caused by the previous remedies.

Fourth. The application of iodoform as a specific in its action on ulcerations of the mucous membranes.

The histories which are given in the paper embrace twenty-nine cases, as follows: In the second stage, eight cases; in the third stage, epiglottis not involved, eleven cases; in the third stage, epiglottis involved, ten cases. Of the eight in the second stage, four were cured, with a chronic laryngeal catarrh remaining; four simply relieved, irregular in attendance —all suffered from chronic pulmonary disease. Of the ten in the third stage, with epiglottis unaffected: cured, one; cured, with chronic laryngeal catarrh remaining, six; relieved (on one of whom tracheotomy was performed), four. In this group the disease was caused by chronic lung disease in eight; by syphilitic asthenia, one; by Bright's disease, one; by anæmia and occupation, one. Of the ten suffering from the epiglottic form of the disease, two were cured; one with chronic laryngeal catarrh, one with aphonia from cicatrices, and also a considerable trace of small, warty growths in the larynx, due to the excessive cell-proliferation characteristic of the disease; on one tracheotomy was performed, with very marked relief; patient died, however, on the tenth day from acute miliary tuberculosis; seven were only relieved somewhat of the subjective symptoms. Of the causes of the disease in this group, one was due to malaria and the direct effect of occupation—a tanner, and nine to lung disease.

Grouping the twenty-nine cases, the results are as follows: There were cured, one; cured, with chronic laryngeal catarrh remaining, eleven: cured, with aphonia from warts and cicatrices remaining, one; relieved to a more or less extent, sixteen.

Of these thirteen cases virtually cured of the laryngeal disease, five were in the third stage of tuberculosis, with cavities; two were in the second stage; three in the first stage; one had Bright's disease and chronic catarrhal pneumonia; one malaria; one chronic catarrhal pneumonia.

The points, in closing, that the writer emphasizes are:

First. Laryngeal phthisis may develop from a simple catarrhal inflammation if there exists an impaired state of health from any cause.

Second. The progressive stages are catarrhal infiltration, catarrhal ulceration, and follicular inflammation, and tubercle plays no part in its primary causation or development.

Third. The disease is far more amenable to treatment than is generally taught, especially if treated in the earlier stage.

Fourth. Tracheotomy is justifiable as a remedial measure, when local remedies fail to relieve, and before it is demanded by dyspnœa from inflammatory stenosis.

14. Bennet's paper, entitled "Changes resulting from Syphilitic Disease of the Larynx and from Tracheotomy," is based upon a case of syphilitic laryngitis in which it became necessary to perform tracheotomy on account of urgent dyspnœa. The patient wore the tube for several years, and finally died from a sudden pleuritic effusion. The changes found in the larynx upon the autopsy were due to cicatricial contraction, and, as described, are not unusual. On opening the trachea it was found contracted as the seat of the operation was approached; elsewhere normal. It was there much narrowed. Its size was that of the last tube worn.

15. The chief peculiarity of the neurasthenic voice is softness, faintness, want of courage, and clearness of tone. These terms, though vague, express, perhaps as well as it is possible to do in words, how this voice deviates from the normal voice, but at best verbal descriptions are faulty, and far inferior to even a single living illustration. To a physician accustomed to see these cases and to observe the voice, there is but little difficulty in at least suspecting the diagnosis by this symptom alone. This neurasthenic voice somewhat resembles the peculiar voice of the deaf; and yet it is not precisely like that, and can usually be distinguished from it. A neurasthenic sufferer may have the muscle of an athlete, and be so strong that a hard day's toil is but play, and yet speak in a voice which in quality and volume of sound suggests the beginning of convalescence from a severe fever.

16. In a memoir presented to the Society of Surgery of Paris, Boeckel describes the remarkable case of a patient, aged twenty-five, who presented a voluminous tumor at the right side of the neck, at the same time the pharyngeal tumor interfered with swallowing. The disease was of three years' date. In November, 1878, swallowing was difficult, but breathing remained free. The tumor of the neck was of the size of an apple; that of the pharynx was of the size of a nut. The pharyngeal mucous membrane preserved its mobility; the two lobes were fluctuating without either pulsation or expansion; no pain, no fever. The movements of the head were interfered with. M. Boeckel diagnosed cysts of the the thyroid, and exploratory puncture, made on December 7, gave issue to a brownish fluid; the pharyngeal tumor did not become emptied. Extir-

pation was performed on December 9, with Listerian precautions. The patient was anæsthetized. An incision was made along the anterior border of the right sterno-mastoid muscle; the vessels were divided between two catgut ligatures. The pouch was gradually dragged out; the retro-pharyngeal cyst was emptied and easily separated from the neighboring parts. A drain was applied, and the wound was sutured in four-fifths of its extent. The cervical cyst had the appearance of a piece of placenta; the walls of the pharyngeal cyst were thinner. Boeckel, however, examined the specimen, and satisfied himself that the cysts were made all of thyroid tissue. The patient was cured on January 6, 1879.

19. The second edition of Cohen's "Diseases of the Throat," now well known and recognized as the standard American work upon the subject, will be fully criticised at a future time in this "Journal"; further mention of it now, therefore, is unnecessary, except to state that it fully sustains the distinguished reputation of its author.

21. Cohen's clinical lecture, under the above title, gives a very readable and interesting *résumé* of the subject of laryngeal paralysis, its laryngoscopic appearances, diagnosis, prognosis, and treatment. It is based upon the presentation of a case of paralysis of the right vocal cord, due to an unusual and interesting cause, viz., direct and severe compression of the recurrent laryngeal nerve in the cervical portion of its course.

22. *Laryngeal Crisis.*—Under this name Charcot describes a very interesting laryngeal affection attending on or preceding sometimes for several years the development of locomotor-ataxy. In criticising this case, Dr. Sémon says that it is characterized by a feeling of strangulation and of heat in the larynx, and by a peculiar laryngeal spasm, followed at once by falling down, and by an epileptiform attack. This may repeat itself several times in succession, as soon as the patient has again become conscious. This vertigo is not followed by nausea, and sometimes it is limited to the laryngeal spasm, without being followed by the epileptiform attack. Generally the patient falls forward. This disease is frequently mistaken for cerebral congestion. The entire attack is produced by an irritation of the superior laryngeal nerve (?). Professor Krishaber had examined the case which was shown by Professor Charcot as an illustration of the disease, and had found that the glottis was greatly narrowed, much more than normally. (It is much to be regretted that this statement is not precise with regard to the permanency of this laryngoscopic appearance, because this factor is of fundamental importance for the pathology of the entire affection. If the narrowing of the glottis be permanent in some degree, and this seems to be the case from Professor Charcot's description, it would appear that the posterior crico-arytænoid muscles, which are supplied by the laryngeal recurrent nerve only, must have been involved in the morbid process. Altogether, the symptoms of the case described bear so strong a resemblance to those of an undoubted case of paralysis of these muscles, accompanying locomotor-ataxy, shown by the reporter in the Clinical Society of London in April, 1878, and recorded in the Society's "Transactions" of the same year, that the reporter can not help believing that the case shown by the celebrated professor, in illustration of his views on the certainly very rare symptom of locomotor-ataxy, on which he lectures, was one of not yet far progressed paralysis of the posterior crico-arytænoid muscles, accompanying the central disease.) Professor Charcot believes that we have no present remedy against these attacks, but thinks they might cease spontaneously.

24. Cole, referring to Mackenzie's note ("British Medical Journal," March 1, 1879), adds several cases of herpes of the inside of the cheek, etc., to the list. In all the inner side of the cheek, gum and tonsil were

unilaterally affected, but in no instance was herpes zona present. There was much neuralgic pain with loosening of the teeth, and even sloughing of the vesicles. Cole holds that the epidemic of spreading quinsy lately described ("British Medical Journal") was a specific herpes of the tonsils; he has seen scarcely a case without either nasal or ocular or labial herpes, and several were also attended by aural herpes. (See also Trousseau, "Clinical Medicine," vol. v., Lecture XVII., and Bretonneau and Gubler, "Union Médicale" for 1858, for older descriptions of the same disease.)

33. Eldridge gives the details of an interesting case of so-called hernia of the trachea—dyspnœa, not of an urgent character, being the prominent symptom. Tracheotomy was undoubtedly indicated, but the patient refused to have it performed, and left the hospital. The article is largely made up of a very complete and valuable *résumé* of the literature of this rare affection, and of an analysis of the cases upon record. These are twelve in number, as follows: Eldridge, Gobl, Fischer, Gayet, Cohen (2), Devalz, Faucon (2), Lizé, Leriche, Behr.

34. The growth in Eliot's case of palato-pharyngeal tumor originated in the tonsil, and slowly encroached upon the palate, meeting with resistance at this point. It took a downward course in the walls of the pharynx, where it met with less opposition and finally made its appearance in the more yielding tissues in the sub-maxillary and cervical regions. It appeared, upon superficial examination, to be sarcomatous in character. It was removed piecemeal through a semi-lunar incision on the posterior margin of the hard palate, connecting with one on its anterior portion. The patient has done well.

88. At a recent meeting of the Berlin Medical Society, B. Fraenkel explained König's apparatus constructed for the demonstration of the manometric flame. As regular and beautiful flames are only formed if clear and musical voices be used, while hoarse or aphonic voices produce manifold changes in the picture, one is enabled to see hoarseness or aphonia by the use of this apparatus. Fraenkel does not, however, admit the use of it for diagnosing different degrees of these affections, because the apparatus is too sensitive and subject to too many different influences. On the other hand, it could be used with some modification (using two flames simultaneously) in order to demonstrate the diminution of the vocal fremitus over the paralyzed side, if one vocal cord be paralyzed. Fraenkel, however, does not on the whole attribute much value to this symptom, first described by Gerhardt. An interesting discussion between the lecturer and Dr. Tobold, especially on the latter subject, ensued, from which, however, no harmonizing of opinion resulted.

40. The entire history of the interesting case in which Dr. Foulis, of Glasgow, removed the larynx, has never been published. It appears that at the time of the operation there was pulmonary disease, though in abeyance. After the third operation, the patient was admitted by his former employer to work as telegraph clerk, and for eleven months was able to keep at his post, wearing the artificial larynx night and day. Toward the end of the year, however, he noticed "occasional streaks of blood in the mucus," and the lower edge of the wound in the neck became slightly excoriated, probably from the downward pressure of the tube. On Christmas day he was carefully examined, and was found to have advanced pulmonary difficulty, "the apices of both lungs being dull to percussion, and giving a prolonged hollow expiration sound," "while the cough, the hæmoptysis, and the night sweating were worse than ever before." The interior of the trachea showed extensive ulceration, presumed to be tubercular. He died March 1, 1879. No *post-mortem* examination was permitted. The conclusions derived from the case are favorable, accord-

ag to the operator, who intimates that the extension of a malignant isease was arrested, the patient dying of an old constitutional difficulty. Ie enjoyed a year of useful and comfortable existence, living, in all, eventeen and a half months after the operation, surviving it a longer eriod than any similar case, so far as is at present known.

45. The author gives an account of eight cases of purely nervous hyeræsthesia of the pharynx and larynx. They are mostly such as come ften under the notice of specialists, and are a source of much trouble nd annoyance both to them and their patients on account of their perinacity. In by far the greater number of the cases, even the most crupulous examination failed to detect any anatomical cause by which to xplain the troubles; in others, there were minute pathological affections, mall erosions in the pharynx, etc., which were, however, too insignificant o account for the sufferings of the patient. In a few cases, Ganghofner bserved other nervous troubles, such as cardialgia, neuralgic pains, etc., ervous dysphagia, and œsophagismus.

The troubles caused by the disease are a feeling of burning, pressure, ricking and dryness in the pharynx or larynx, sometimes in both organs t once; at the same time, the patients sometimes complain of a feeling s if their throat were being forcibly compressed, or as if they had a oreign body in the throat; in some cases, the pain extends as far as the ip of the nose or the tongue. If the larynx is affected, spasms of the lottis occasionally ensue, or a purely nervous spasmodic cough without ny expectoration; the latter sometimes as often thirty or forty times laily, but, as a rule, not quite so often. These phenomena are either persistent, or they only appear periodically, and are then provoked by much speaking, irritating food, or mental emotions.

Among the twenty-four cases observed by the author were fifteen female patients and nine male, averaging in age from eight (boy) to fifty-seven years. The etiology of this affection is not clear. It has often been ascribed to anæmia, but anæmia did not exist in every case. It was generally preceded by inflammation of the organs of the throat, simple anginas, etc. It often occurs in hysterical patients, but has also been met with in cases where no hysterical symptom was manifest. The author has frequently observed that several individuals in the same family have successively been affected by it, so that he is inclined to think that there may be an hereditary disposition to this affection. Affections of the genital organs also seem to have some influence on its development.

Ganghofner discriminates two forms of the affection, one due to a continuous irritation of the peripheric terminations of the nerves in the mucous membrane, and another purely central, and not caused by any external influence. In treating this affection, it must always be borne in mind that there is a great tendency to frequent relapses, and that it is a very stubborn disease. The treatment consists in cold baths, sea-bathing, change of air, milk cures, mountain air, etc., or in the use of the galvanic current; painting the throat with solutions of bromide of potassium, tannin, glycerine, morphine, inhalations of weak solutions of salt, etc. In some cases, it will be found advisable to give bromide of potassium internally, or even to administer hypodermic injections of morphia.

46. Dr. Gross, in his lecture upon the surgery of the larynx, still holds to many old and some obsolete views. His advice as to local medication is that of twenty years or more in the past. The laryngoscope is only alluded to in connection with the subject of laryngeal growths; for the removal of these it is necessary, he thinks, to perform laryngotomy, or thyrotomy, or tracheotomy. In some *rare* cases it is possible to remove them by an oral operation. In such cases, a liniment of eight grains of morphia and a fluid drachm of chloroform in an ounce of water must be daily applied to

the parts on a sponge, to render them tolerant to the instruments. He seldom tries to remove a tumor through the mouth, however, unless it be high up. The statement that when the epiglottis has been lost there is great difficulty experienced in the act of swallowing is not borne out by facts.

49. The ordinary movements of the face and larynx which accompany thoracic respiration have long been familiar to physiologists, and are described in text-books. The author of the above paper fails to find, however, any reference to certain pharyngeal movements which are also associated, in the dog at least (upon which the experiments were performed) with thoracic respiration. As a general result from the data furnished by his experiments he deduces the following conclusions: 1. The pharyngeal expansion is a phenomenon which precedes inspiration, though it may not be completed before inspiration begins. It coincides with the previous expiration or with the expiratory pause according to the type of breathing. 2. The pharyngeal contraction in the majority of cases coincides mainly with inspiration, and appears to be essentially an inspiratory phenomenon.

51. Gruber calls "retrotracheal retention-cysts" not the hernia-like pouches of the tracheal mucous membrane, but the "mucous cysts" (Virchow) which owe their origin to the retention of the secretion in hypertrophied retrotracheal mucous glands, the apertures of which have remained open. They are extremely rare. One case has been communicated by Rokitansky in 1838, two cases previously by our author in 1869 and 1875, and now two new ones are brought forward by him. These are all on record. In both the new cases they were only accidentally discovered on dead bodies; but, as one of them had an enormous circumference when filled, viz., five centimetres, the author suggests that, in cases of operation in the neighborhood of such cysts, an accidental incision might not be without importance.

55. Dr. Hall reports nine cases of laryngeal disease—two of syphilis, two of tuberculosis, and two of paralysis. In another case, hoarseness of four years' standing was cured by removal of the nasal polypi. Case VIII. was one in which post-nasal catarrh and ozæna were relieved, and in case IX., one of dyspnœa and laryngeal stridor, no diagnosis was arrived at. Nothing new is proposed in the treatment of any of these cases.

56. Ellingsworth firmly believes that there is no longitudinal stretching of the vocal cords by muscular action during vocalization, and in his interesting paper submits certain views of the voice and of the action of the laryngeal muscles (see also "Edinburgh Medical Journal," December, 1876, and November, 1877). He begins with a consideration of the action of the crico-thyroid muscles, and sums up with the statement that to admit a longitudinal tension of the vocal cords by the action of the crico-thyroid muscles is to admit an anomaly in the phenomena of muscular action, in the shape of the stretching of a muscle during its contraction. He looks upon the laryngeal muscles as being five in number, viz., the sphincter glottidis, a pair of crico-thyroids, and a pair of posterior crico-arytænoids. The sphincter and crico-thyroids are alone concerned in vocalization; the posterior crico-arytænoids in respiration. By the sphincter glottidis he means the mass of muscle which extends from the margin of the ary-epiglottic folds to the upper border of the cricoid cartilage, and embraces the arytænoid cartilages posteriorly, including thus the arytæno-epiglottidean, thyro-arytænoid, lateral crico-arytænoid and arytænoideus muscles, between all of which there exists a more or less distinct continuity of muscular fiber. When the sphincter is put into action for phonation, it will tend not only to approximate the arytænoid cartilages (and, necessarily, therefore, also the vocal cords), but also to draw them bodily for-

ward toward its fixed anterior attachment. It is here, he thinks, the crico-thyroid muscles come into play. Acting simultaneously with the sphincter, they will hold back the posterior part of the cricoid cartilage, thus acting upon the arytænoid cartilages through the crico-arytænoid ligaments, to prevent their being drawn forward by the antero-posterior traction of the sphincter.

But it may be said that if this view be the correct one there is still direct antagonism in the actions of the sphincter and crico-thyroid muscles. This, however, it will be seen, is not the case when it is remembered, firstly, that the arytenoid cartilages are fixed only at their bases by the crico-arytænoid ligaments, above that point and up to their apices being pliable and elastic; and, secondly, that they are moved in the arcs of circles of which the crico-arytænoid ligaments are the radii, by the actions of the sphincter (in phonation), and posterior crico-arytenoids (in respiration), while the crico-thyroids act as the center-pin fixers, by firmly holding the cricoid attachments of the crico-arytænoid ligaments.

57. The author considers in some forms of phonatory paralysis the condition of the voice, not only as a very valuable means of diagnosis, but even as quite pathognomonic. In cases of a simple paresis or atony of the adductors of the glottis, in which at the beginning of phonation the glottis is completely closed: in which, however, immediately afterward the vocal cords separate, and leave a triangular division between each other until the end of phonation: in such cases, he says, the voice completely corresponds with the laryngoscopic appearance. It is an aphonic voice, with short intervals of pure phonation. The short normal sound is heard when the patient begins to phonate after an inspiration; immediately afterward, however, only an aphonic *bruit* can be produced. On the other hand, the author continues, a laryngoscopic symptom of phonatory paresis seems to have been overlooked up to the present. This is the lower stand of the diseased vocal cord. The symptom which is at present taught as characteristic for a phonatory paresis of one vocal cord, viz., an excavation of its border resulting in a semi-oval form of the glottis, is by no means to be relied on, inasmuch as it is, in many cases, in no proportion to the actual trouble of the voice, and as it might be found on the other hand sometimes in cases with a thoroughly normal voice. The lower stand of the diseased cord, however, produced by the minor degree of its tension, and the consequent minor degree of its elevation, through the contraction of the muscles of the vocal cords (?), can only occur in cases of phonatory paresis .The glottis gapes, not in an horizontal but in a perpendicular or oblique plane. This is seen if the mirror be now held in a quite horizontal and symmetrical, but in a somewhat lateral position. Two cases illustrating these conditions are appended.

59. A short notice of Dr. James's well known little hand-book, now in its third edition, will appear elsewhere in this "Journal."

72. The seven cases reported by Dr. Leaming were as follows:

Case I.—A ten-cent piece lodged in trachea at the right side of the septum (bifurcation). Promptly expelled by inversion of the body. Recovery.

Case II.—Tracheotomy tube in cul-de-sac of first division of right bronchus. Removed by operation. Recovery.

Case III.—A head of timothy grass was drawn through trachea and into right lung. Total destruction of lung. Expulsion of foreign body by coughing. Death in one week.

Case IV.—Collar button in third division of right bronchus. Pleurisy, with some consolidation of lung. After lapse of several months tracheotomy. Removal of body by forceps. Recovery.

CASE V.—Fragment of peach stone in right bronchus. Spontaneous expulsion. Recovery.

CASE VI.—Entrance of blood to bronchus. Pleurisy. Consolidation and abscess of lung. Death.

CASE VII.—Tooth lodged in left bronchus. Pleurisy. Consolidation. Death.

74. A patient suffered for nearly seven years from repeated and violent attacks of epistaxis from the left nostril, complicated by the feeling of a painful pressure on the left half of the nose. Rhinoscopic examination failed to detect any particular change. Styptic injections of acid ice-water, internal application of sulphurous acid and of ergot, were not successful in their results. Plugging of the nose was not permitted. One day, when sneezing, the patient suddenly expelled from the nostril a parasite, similar to a small earth-worm, which was classified by Professor Beneke as a moth, belonging to the class of Linguatulida, called Pentastoma tænioides. These animals are frequently met with in the frontal and nasal cavities of the dog, fox, and wolf, rarely of the horse and goat, sometimes of man. In this case it was not certain how the parasite could have penetrated into the nose of the patient, but it was clear it had produced the epistaxis, which at once and permanently ceased after its expulsion.

75. Laboulbène, in a late clinical lecture, gives notes of a case of this unusual form of disease, together with the results of the autopsy, some historical account of the affection, and a brief summary of the symptoms presented. During the first period, which passes almost always unperceived, a few grayish granulations can be seen on the bucco-pharyngeal mucous membrane, but there are no other symptoms.

Ulceration begins by the fall of the epithelium, which lays bare the granulation; the stage of pain now begins; the impression of cold air, the contact of wine, of food, movements of the tongue, give rise to pain sometimes so severe that the patient refuses food. Salivation, sometimes excessive, occurs. There is, however, no involvement of the salivary or cervical glands.

Later, the patient shows signs of pulmonary, abdominal, or cerebral phthisis.

On examining a case of this kind, one is struck by the fact that the edges of the ulcers are elevated and festooned; some of them, however, are sharply rounded, while others resemble the trail of a worm on a piece of cloth. The former ulcers are old, the latter recent—a characteristic which is wanting in syphilis. Around these old ulcers is a yellowish patch, composed of tuberculous infiltration, which is pathognomonic. The ulcers last for a greater or less time, but they are curable.

Dr. Laboulbène gives the differential diagnosis between these ulcers and those of the various forms of syphilis, of epithelioma, buccal psoriasis, etc.

The treatment recommended includes such caustics as tincture of iodine, nitrate of silver, perchloride of iron, together with emollient washes. Especial attention must be paid to the patient's general condition.

76. An enormous tumor of the soft palate, commencing as an angina, accompanied by swelling of the lymphatics. The tumor grew slowly, without pain and without any symptoms except some constitutional disturbances. After six months the tumor became gangrenous. The patient died, and in the autopsy, gangrenous tissue alone was found as the locality of the growth. The lymphatics of the neck—which before death were markedly swollen—were of natural size. Mercier raises the question as to the nature of this tumor.

81. The author presents a case of this rare affection, "Diphthonia 'aralytica" (Türck), supposed to arise from combined paresis of the Transversus Laryngis and Thyreo-Arytenoidei interni." The patient affered from chronic catarrhal laryngitis. Upon his making an effort to ound "a," a "diphthonia" consisting of an ordinary "a" sound, followed y a well-marked falsetto which imparted to the voice an agreeable and iusical tone, was distinctly heard. The laryngoscope showed the outline f the rima glottidis to be completely altered, the cords approaching each ther near their middle, and giving the appearance described by Browne s the hour-glass glottis. There were, in fact, two glottic orifices, an nterior enclosed by the cords, and a posterior extending from near the rocessi vocales backward; the former called, by Professor Johannes chnitzler, Bänder (cord), the latter Knorpel-glottis (cartilage glottis). 'he case was entirely cured by relieving the catarrh by the usual means, nd the paresis by the use of intra- and extra-laryngeal faradization, and he administration of excito-motor stimulants. The author refers to the ollowing articles as embracing the literature on the subject: Schnitzler "Wiener med. Presse," 1874–5), Müller ("Handbuch der Physiologie es Menschen," 2ter Band., 1840, pp. 187), Stoerk ("Klinik der Krankeiten des Kehlkopfs," 1876, pp. 180), Türck ("Klinik der Krankheiten les Kehlkopfs," pp. 465), Rossbach ("Physiologie und Pathologie des nenschlich Stimme," 1ter Band., pp. 571), Merkel ("Anatomie und Phyiologie des menschlich Stimme," 1857, pp. 628).

88. After a short retrospect of the literature of tracheal syphilis, Obtulowicz describes the following case from Professor Rosner's "Klinik für Syphilis," in Cracow. A man, aged thirty-two, suffered from syphilis or ten years. On admission, marked stenosis of the air-tube; two days ater, tracheotomy; one month later, sudden death. On autopsy, a ringhaped cicatrix was found, which constricted the trachea just at the bifuration, so narrow that a fine probe was with difficulty passed through it.

91. Dr. William Porter, of St. Louis, alluding to the recorded cases in which portions, if not the whole, of the epiglottis has been severed, either by accident or disease, records three cases of his own, in one of which he removed three fourths of the organ for a neoplasm. The main disturbance in such cases seems to be in phonation; the vowel sounds *a* and *e* are less distinct, and the voice harsh if the cartilage is irregular and agged. Deglutition, on the other hand, becomes easy after a time, for the base of the tongue may so cover the larynx, and the muscles and mucous folds so close it, that the loss of the organ is largely compensated for. Usually, when ulceration sets in, the process of destruction is so slow that the parts gradually accustom themselves to the loss. After an accident, as when Murat lost a portion of the epiglottis from a musketball, it may be necessary to introduce an elastic tube into the stomach as an artificial aid. Dr. Porter did not find this necessary in his case, which was as follows: for some five months there had been difficulty in swallowing, with laryngeal pain and cough. On laryngoscopic examination a large nodule was found occupying three fourths of the free edge of the organ. After some weeks of local treatment, which accomplished nothing, the diseased mass, including fully one half of the epiglottis, was severed. Semi-solid food was then ordered, but no artificial aid was resorted to, as the long-continued disease of the part had accustomed the patient to supply its loss. The wound healed in a fortnight, and there has been little functional disturbance. The following conclusions are given: if a benign growth of the epiglottis exist, or there is malignant disease which has not as yet implicated the surrounding parts, removal of the epiglottis, or such a part of it as is involved, is practicable and justifiable.

93. Potain describes this affection as presenting itself under different

forms. Very early in the course of the disease herpetic vesicles may be seen upon the pillars of the fauces or upon the tonsils—sometimes even upon the pharynx. These rapidly disappear; the epithelium is thickened and blanched. If the vesicles are isolated, they are surrounded by a bright-red aureole. If, they are confluent, there will be an exudation more or less marked over their whole surface, of whitish color and irregular borders. Sometimes opaline patches appear, adhering to the mucous membrane, or occasionally becoming detached. Under these there is ulceration of the mucous membrane, with tumefaction of the membrane surrounding the ulcerations.

97. M. Quinart describes, in the "Archives Médicales Belges," a method of treating hypertrophy of the tonsils that has proved very successful in his hands. The method, which is only applicable after the inflammatory period has passed, consists in massage of the gland, and is carried out as follows: He covers his index-finger with alum, introduces it into the mouth, and brings it to bear directly on the tonsil, which is manipulated, with gradually increasing force, over as great an extent of its surface as can be reached. The operation is at first painful and disagreeable, but the discomfort is readily allayed by an emollient gargle. After a few repetitions it ceases to be painful, and the patients readily learn to practice it themselves.

99. Dr. Beverley Robinson has an interesting communication in the April number of "The American Journal of Medical Science" on the nature of the above affection and the value of tracheotomy in its treatment. He believes that tracheotomy, at an early period of chronic disease of the larynx, looked at in regard to its indications and its possible or probable results, merits attention as a *prophylactic*, or as a *remedial* operation. Personally he is convinced that tracheotomy will be frequently performed, within a brief period from the present, as a trustworthy *remedial* operation in ulcerative phthisical laryngitis—first, because he believes that ulcerative phthisical laryngitis is usually non-tubercular in its nature, and therefore curable; second, because tracheotomy seems to be the best, if not the sole, means of directly attaining the end.

100. This operation was performed on May 11, 1878, in Madrid, on a man aged forty-one, by a Spanish physician, Dr. Federigo Rubio. It was undertaken on account of extensive caries and destruction of the left half of the thyroid, and of thickening and hypertrophy of the cricoid and arytænoid cartilages. The morbid process began ten months previously with the bursting of an abscess of the neck into the larynx. The first acute symptoms having disappeared, a laryngeal fistula was established. The respiratory difficulties and the marasmus became so great as to demand the capital operation. It was performed successfully, but the patient died five days later.

102. From Settegast's very careful report, which abounds in interesting cases, it will be seen that the extra-laryngeal method of removing neoplasms from the larynx is exclusively practiced in his hospital. The author admits that, in two of the six cases of papilloma in children in which surgical interference took place, the endolaryngeal method could have been made use of, but says that Bruns (who, based upon his incontrovertible statistics, so categorically requires the trial of the latter before the former is proceeded with) underrates the difficulties which accompany the performance of endolaryngeal operations for a surgeon who does not occupy himself specially with the endolaryngeal method. The latter is a difficult and lengthy study, which demands the greater part of the working power of an individual. Three out of the six little patients, who were operated upon for multiple papillomata by tracheotomy and subsequent laryngotomy, died (!)—one from suffocation in consequence of the canula

eing ejected from the trachea by the patient himself during an attack of iolent cough; one from hæmorrhage of the tracheotomical wound; one rom complication with diphtheria. One was completely cured (the paient was one year and two months under treatment!); one was relieved; ne was still under treatment when the report was published. The author trongly recommends the subhyoidean pharyngotomy in cases in which he endolaryngeal method can not be practiced. He claims the following dvantages for it: "Without touching the glottis, it lays the same open rom above, like cricotomy, or opening of the thyro-hyoid membrane, he territory below the glottis. Moreover, it offers the advantage that ricotomy, should this become necessary, might very comfortably be added. hus, for instance, it might be employed for tumors of the ventricles, hich are so often inaccessible to the endolaryngeal method. The conitions for restoration to health are favorable. The evacuation of the ecretion is rendered satisfactory if a part of the wound remain open or be drained." The succeeding chapters on syphilitic affections of the rynx, malignant neoplasms, wounds of and foreign bodies within the ir-passages, and on tracheal fistulæ after tracheotomy, contain mainly ommunications of some very interesting cases. In one of them a tracheal anula was spontaneously expelled from the left bronchus, having been dged in it four weeks.

104. At a recent meeting of the Philadelphia Academy of Natural Scinces, Dr. Seiler said he had been interested in the anatomy of the larynx, nd had recently ascertained that very peculiar symptoms were manifested y this organ in the very earliest stages of consumption. An opportunity to nvestigate this subject was recently offered in the case of an infant which ad died of acute tuberculosis. In this case, of which he had made secions of the organ, which he exhibited, the arytænoid cartilages were found o be swollen at one extremity, so as to assume a pear shape. This "pyriorm swelling" of these cartilages appeared so early in the course of the isease that, by means of it, a very early diagnosis might be made, and hus much be done to arrest if not cure the trouble.

105. Sommerbrodt relates the history of a case of hypertrophy of the ntire left false vocal cord, cured by means of the galvano-cautery. Thireen applications, in part superficial, and some deep into the diseased ssue, so improved the condition that the patient—a physician, aphonic r five months—was enabled to use the voice perfectly. Sommerbrodt ecommends Voltolini's battery.

106. Smith reports a case of retro-pharyngeal abscess in a child of six onths. It was opened, and the patient made a good recovery.

109. Dr. Sémon's interesting and valuable paper on "Tracheotomy in ilateral Paralysis of the Posterior Crico-Arytænoid Muscles" is based pon the sequel of a case which he brought before the Clinical Society ne year ago (see "Lancet," April 20–27, 1878), and, although he then lvocated the operation, he had given his patient a fair trial with the irect application of electricity to the paralyzed muscles. It finally beme necessary to perform the operation, the patient being *in extremis*, d only rescued from death with great difficulty. He brought the case rward again mainly because it raised the question, "Under what circumances and at what period of the disease is tracheotomy to be performed these cases?" It had been lately stated by Mr. Lenox Browne that acheotomy could be probably often avoided, because relief was afforded milder remedies and methods. However, in Mr. Browne's own case lustrating this view, there was still considerable actual stenosis of the ottis, in spite of the disappearance of the subjective symptoms, and thus e patient was, as Dr. Sémon's case clearly proved, far from being out of nger. Dr. Sémon proposed the following general principle for the treat-

ment of these cases: In a case of bilateral paralysis of the posterior crico-arytænoid muscles, in which a considerable stenosis of the glottis has taken place and marked dyspnœa is present, unless within a short time not only subjective relief but an actual enlargement of the glottic opening has been obtained, then tracheotomy ought to be performed without delay, as a prophylactic measure, with a view to the subsequent removal of the tube in case any later therapeutical efforts should produce a real cure of the affection. Dr. Sémon showed another case where the bilateral paralysis was incomplete, the vocal cords coming completely together during vocalization, but during deep inspiration the anterior two thirds of the vocal cords remain close together, and the posterior thirds only separate, leaving a triangular space between their borders and the inter-arytænoid fold. This had never hitherto been described, and might be explained, by Bulman's recent physiological observations, to be due to the fact that, while the outer fibers of the posterior crico-arytænoid muscles were paralyzed, the inner fibers which rotate the processus vocales of the arytænoid cartilages outward were intact. If, then, a secondary paralytic contraction of the antagonistic muscles set in, the result would be that seen in this case. This explanation was admittedly hypothetical, but its feasibility was demonstrated in the model illustrating the action of the laryngeal muscles, invented by Professor Brohl, of Munich.

111. Dr. Andrew H. Smith's patient, a lady aged fifty-two, complained of dysphagia for several days, followed by sensation as of a foreign body in the throat; was nervous and apprehensive; no dyspnœa. Examination showed a spherical tumor the size of a nutmeg upon the left ary-epiglottic fold. The tumor was wholly opaque, sharply defined, and the neighboring structures but little infiltrated. Although it fell toward the glottis, the tumor did not fit accurately enough to impede the entrance of air. Spontaneous rupture occurred, and in the course of a few days nothing remained of it but a depressed cicatrix in the slightly thickened.

112. Seiler's work is reviewed elsewhere in the pages of this "Journal."

118. Verneuil asserts that the purulent focus which invariably develops during the last stages of amygdalitis is not situated in the interior of the tonsil, but in its vicinity—viz., in the cellular tissue which separates the organ from its groove. The tonsil does not adhere very firmly to this groove, and, when tumefied through the inflammation, it bulges out between the anterior and posterior pillars of the velum of the palate, and moves backward and forward at every movement of deglutition. This mobility is one of the principal causes of the formation of the abscess. The gland being continually displaced, a serous bag forms in the connective tissue, which stretches between both pillars and occupies the bottom of the groove of the tonsil. In this serous bag the purulent gathering is formed. The abscess is always very deep-seated, and can not, therefore, easily be reached by a bistoury, as an incision directed in a straight line toward the tumor which the tonsil forms in the isthmus of the larynx would not be able to reach it. To open the abscess it would therefore be necessary to cut through the anterior pillar of the velum of the palate; this pillar, which is much enlarged and protruding, forms the anterior wall of the abscess; but, at the same time, it is highly œdematous, so that in order to pierce it a very deep incision would have to be made, and, in doing this, the carotid artery might easily be injured. It would therefore appear that abscesses of the tonsils had better be let alone. They must not be opened, and it is better to wait and allow the pus to make a way for itself through the anterior pillar. Happily, the affection never lasts long, and the abscess generally opens spontaneously on the fourth or fifth day.

120. Dr. B. Wagner reports a case of abscess of the left ary-epiglottic

fold in a man aged sixty-two, who was suddenly attacked with dysphagia, slight pain in the throat, and general malaise. Laryngoscopic examination showed the epiglottis to be somewhat congested, the posterior surface of left arytænoid cartilage and left ary-epiglottic fold red and swollen to the size of a hazel-nut. The swelling became reduced in about two weeks, and in the week following a slight discharge of pus came from a small opening in the tumor. The dysphagia continued some time longer.

122. Wyethe, after summarizing Ehrmann's case, gives a *résumé* of the whole subject of arterial ligature for the arrest of tonsillar hæmorrhage, that is of so much value and interest that we reproduce it here in its entirety:

Ehrmann's case is as follows: Patient, male; aged twenty-two; had suffered from sore throat, which terminated in abscess of the tonsil, which opened spontaneously. A severe arterial hæmorrhage followed, which occurred a third time, and the common carotid was tied. Hæmorrhage did not return, and the recovery was complete. No cerebral symptoms followed. Ehrmann concludes that the "origin of these tonsillar hæmorrhages is from the internal carotid, and that the only rational treatment is the ligature of the common carotid."—"Gazette des Hôpitaux," No. 146, p. 1165.

Chassaignac tied the primitive carotid to arrest hæmorrhage after puncture of a retropharyngeal abscess. Patient recovered. Cured.

Dewar performed the same operation to arrest hæmorrhage from a "pulsating tumor" of tonsil. Patient recovered. Cured.

Güntner, also, in removal of a tonsil. Patient recovered. Cured.

Duke tied the primitive carotid to arrest hæmorrhage after puncture of a supposed abscess (really a traumatic aneurism) of pharynx (Duke did not puncture the tumor himself). Slight paralysis followed the operation, and patient died on the thirty-fifth day from hæmorrhage.

Heine operated in like manner in removal of sarcoma of right tonsil. Paralysis of left side followed, with delirium and death on sixth day.

Stanley, also, to arrest hæmorrhage after puncture of tonsil. Twenty-seven days after operation hæmorrhage occurred, hemiplegia on thirty-first day, and death on sixty-first day. Autopsy: abscess and softening of the brain.

A. C. Post, also, on account of malignant disease of tonsil. Paralysis ensued, and death from the disease and cerebral complications on third day.

Of these eight cases, four recovered (Ehrmann, Chassaignac, Dewar, and Güntner). and four died (Duke, Heine, Stanley, and Post).

Paralysis occurred in all of the fatal cases, resulting from the cutting off of the blood supply to the brain. Hæmorrhage, fatal in one and probably the cause of death in the other, occurred after the operation in two cases.

In lesions of the tonsils, hæmorrhage to an extent requiring operative procedures for its arrest may occur, 1st, directly, from the internal carotid; 2d, tonsillar branches from the ascending pharyngeal; 3d, tonsillar branches from the facial (or external) carotid.

If the hæmorrhage is from the internal carotid it will be profuse, and demands arrest either by direct pressure or ligature of the internal (not the common) carotid, and the vessel should be secured on both sides of the lesion. Ligature of the internal carotid does not cut off the supply of blood to the brain to such an alarming extent as ligature of the common trunk, since the free anastomosis between terminal branches of the external carotid in the orbit with the ophthalmic artery and its branches secures an important collateral blood supply to the brain, which of course is lost in ligature of the primitive trunk.

[illegible] appreciated the danger of depriving the [illegible] by occluding the common carotid. In [illegible] cases after ligature of the primitive carotid, Wyeth [illegible] the cause of death in two hundred.

[illegible] proved fatal from interference with the [illegible] of its blood supply, while in [illegible] interference with the cerebral circulation [illegible].

[illegible] twenty-three fatal cases the brain was [illegible] per cent. important changes were [illegible].

If the hemorrhage is from the tonsillar branches of the facial or [illegible] external carotid one half-inch above the [illegible] pharyngeal, or any other branches in the immediate vicinity should be performed—and, if this does not arrest the bleeding, the common trunk and the internal carotid should be tried. In such cases the ascending pharyngeal will probably be found to be derived from the internal carotid within the first inch of its course, since in seven of one hundred and twenty dissections Wyeth has found this relation to exist. He therefore can not indorse the conclusion of Ehrmann, who says: "The origin of these tonsillar hemorrhages is from the internal carotid, and that the only rational treatment is the ligature of the common carotid."

CONDUCTED BY DR. G. R. CUTTER.

THEORY AND PRACTICE.

Anchylostoma Duodenale and Progressive Pernicious Anemia.—Dr. P. Sonsino found that in nine post-mortems made in Cairo, seven of the cadavers contained this parasite. In a communication made last year to the Società Medico-fisica di Firenze, he stated that these worms were found firmly attached to the mucous membrane of the duodenum and jejunum: after eroding this membrane they sucked out the blood, and thus abstracted it from the individual. When there are many of these worms present a considerable amount of blood is lost, and hence more or less intense anemia. The cadavers in which these worms were found presented signs of this anemia. In a woman dying of anemia perniciosa progressiva at the hospital in Firenze, the intestines were found to be very thin, pallid, and almost transparent. Hundreds of the parasites were found in the jejunum and a number in the ileum. They were dead and attached to the mucous membrane, which presented corresponding grayish ecchymoses. No other lesions were found sufficient to account for the profound anemia.—"L'Imparziale," and "Gaz. Med. Lombardia," June, 1878. G. R. C.

Miscellany.

Medical Department of the United States Army.—The following are the rules for the admission of candidates to the medical service in the Army of the United States:

"Sec. 1. *Be it enacted, etc.*, That from and after the pasage of this Act, no person shall receive the appointment of Assistant Surgeon in the Army of the United States, unless he shall have been examined and approved by an Army Medial Board, to consist of not less than three Surgeons or Assisant Surgeons, who shall be designated for that purpose by he Secretary of War, and no person shall receive the appointment of Surgeon in the Army of the United States unless he hall have served at least five years as an Assistant Surgeon, and unless, also, he shall have been examined by an Army Medical Board constituted as aforesaid."

"Sec. 4. That the Medical Department of the Army shall hereafter consist of one Surgeon-General. . . . One Assistant Surgeon-General. . . . One Chief Medical Purveyor, four Surgeons, with the rank, pay, and emoluments of Colonels, two Assistant Medical Purveyors. . . . Eight Surgeons, with the rank, pay, and emoluments of Lieutenant Colonels, Fifty Surgeons, with the rank, pay, and emoluments of Majors. One hundred and twenty-five Assistant Surgeons, with the rank, pay, and emoluments of Lieutenants of Cavalry for the first five years' service, and with the rank pay, and emoluments of Captains of Cavalry after five years' service. . . ."

All candidates for appointment in the Medical Corps must apply to the Hon. Secretary of War for an invitation to appear before the Medical Examining Board. The application must be in the handwriting of the candidate, stating age and birthplace, and be accompanied by testimonials from Professors of the college in which he graduated, or from other Physicians in good repute. Candidates must be between twenty-one and twenty-eight years of age (without any exceptions), and graduates of a regular medical college, evidence of which must be submitted to the Board before examination.

The morals, habits, physical and mental qualifications and general aptitude for the service of each candidate will be subjects for careful examination by the Board, and a favorable report will not be made in any case in which there is a reasonable doubt.

The following will be the general plan of the examination:

I. A short essay, either autobiographical or upon some professional subject—to be indicated by the Board.

II. Physical examination. This will be rigid, and each candidate will, in addition, be required to certify "*That he labors under no mental or physical infirmity, nor disability of any kind, which can in any way interfere with the most efficient discharge of his duties in any climate.*"

III. Oral examinations on subjects of preliminary education, general literature, and general science. The candidate must satisfy the Board in this examination that he possesses a thorough knowledge of the branches taught in the primary schools, and a failure to show this will end his examination.

Oral examination on scientific subjects will include Chemistry and Natural Philosophy; and that on literary subjects will include English Literature, History of the United States, and General History—Ancient and Modern. Candidates possessing a knowledge of the higher mathematics, the ancient and modern languages, will be examined therein, and due credit given for a proficiency in any or all of these subjects.

IV. Written examination on anatomy, physiology, surgery, practice of medicine and general pathology, obstetrics, and diseases of women and children. Oral examination on these subjects, and also on medical jurisprudence, materia medica, therapeutics, pharmacy, toxicology, and hygiene. Few candidates pay the attention to hygiene which it deserves; it is made an important subject in this examination.

V. Clinical examination, medical and surgical, at a hospital.

VI. Performance of surgical operations on the cadaver.

The Board will deviate from this general plan whenever necessary, in such manner as they deem best to secure the interests of the service.

The Board will report the merits of the candidates on the several branches of the examination, and their relative merit in the whole, according to which the approved candidates will receive appointments to existing vacancies, or to vacancies which may occur within two years thereafter.

An applicant failing one examination may be allowed a second after one year, but not a third.

No allowance will be made for the expenses of persons undergoing examination, as this is an indispensable prerequisite to appointment, but those who are approved and receive appointments will be entitled to transportation on obeying their first order.

Signed, GEO. W. MCCRARY,
Secretary of War.

Appointments, Honors, etc.—Dr. Beverley Robinson has been appointed Visiting Physician to St. Luke's Hospital in this city, *vice* Dr. William M. Polk resigned. The degree of LL.D. has been conferred by St. Mary's College, Maryland, on Dr. Roberts Bartholow, and by the University of Vermont on Dr. William Darling. Dr. William A. Hammond's work on nervous diseases has been translated into the French language by Dr. F. Labadie Lagrave, who has made some additions to it.

Dr. George H. Kidd, of Dublin, has been elected President of the Irish Medical Association for the year ending May 31, 1880; and Dr. Edward D. Maypother has been elected President of the Royal College of Surgeons in Ireland.

American Otological Society.—At the annual meeting of this society, held in Newport, R. I., July 22, the following officers were elected for the ensuing year: President, Dr. A. M. Buck; Vice-President, Dr. Charles H. Burnet; Secretary and Treasurer, Dr. J. J. B. Vermyne; Publication Committee, Dr. J. O. Greene, Dr. Clarence J. Blake, and Dr. Vermyne; Committee on Membership, Dr. George Strowbridge, Dr. H. D. Noyes, and Dr. C. J. Blake.

American Dermatological Association.—The third annual session of this association will be held in New York, on the 26th, 27th, and 28th of August, 1879.

R. W. TAYLOR, M. D.,
Secretary.

International Medical Congress.—The sixth International Congress of Medical Science will be held in Amsterdam, August 7th to 13th. The French language will be spoken at the general meetings. Professor Donders is the President of Organization.

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department, United States Army, from June 14 to July 13, 1879.

McKee, J. C., Major and Surgeon, Medical Director of Department of Arizona.—Granted leave of absence for one month, on Surgeon's certificate of disability, with permission to leave the Department. Leave extended fifteen days. S. O. 64, Department of Arizona, May 31, 1879.

White, C. B., Major and Surgeon.—When relieved, to proceed to New York City and report arrival by letter, to the Surgeon General. S. O. 150, C. S., A. G. O.

Sternberg, G. M., Major and Surgeon.—Relieved from temporary duty at Washington, D. C., and to report to the President of the National Board of Health for duty with the "Havana Commission." S. O. 153, A. G. O., June 30, 1879.

Storrow, S. A., Major and Surgeon.—Granted leave of absence for one month, on Surgeon's certificate of disability, with permission to leave the Department. S. O. 54, Department of the Platte, June 25, 1879.

Wolverton, W. D., Major and Surgeon.—Granted leave of absence for four months. S. O. 140, A. G. O., June 18, 1879.

Janeway, J. H., Major and Surgeon.—Assigned to duty temporarily, as Post Surgeon at Fort Columbus, New York Harbor, in addition to his duties at Fort Wood. S. O. 105, Department of the East, June 30, 1879.

Notson, Wm. M., Major and Surgeon.—Relieved from duty with the Army Medical Board in session in New York City, and assigned to duty as Post Surgeon, Columbus Barracks, Ohio, relieving Surgeon C. B. White. S. O. 150, C. S., A. G. O.

Gibson, J. R., Major and Surgeon.—Granted leave of absence for four months. S. O. 150, A. G. O., June 26, 1879.

Fitzgerald, J. A., Captain and Assistant Surgeon.—The sick leave, granted him in S. O. 42, February 20, 1879, from A. G. O., extended twelve months on Surgeon's certificate of disability. S. O. 147, A. G. O., June 23, 1879.

De Hanne, J. V., Captain and Assistant Surgeon.—Granted leave of absence for one month on Surgeon's certificate of disability, with permission to leave the Department. S. O. 123, Department of Texas, June 12, 1879.

Carvallo, C., Captain and Assistant Surgeon.—Granted leave of absence for six months. S. O. 150, C. S., A. G. O.

Kimball, J. P., Captain and Assistant Surgeon.—Relieved from duty at Fort Columbus, New York Harbor, and assigned to duty as Attending Surgeon at the Headquarters of the Military Division of the Atlantic and Department of the East. S. O. 105, C. S., Department of the East.

Cleary, P. J. A., Captain and Assistant Surgeon.—Granted leave of absence for five months. S. O. 157, A. G. O., July 7, 1879.

Hall, J. D., Captain and Assistant Surgeon.—Relieved from assignment to duty at Fort Griffin, and assigned to duty at Fort Concho, Texas. S. O. 121, Department of Texas, June 10, 1879.

Munn, C. E., Captain and Assistant Surgeon.—Granted leave of absence for four months. S. O. 159, A. G. O., July 9, 1879.

Havard, **Valery**, First Lieutenant and Assistant Surgeon.—Assigned to duty as Post Surgeon at Fort Johnston, N. C., relieving Assistant Surgeon B. G. Semig, who will comply with S. O. 114, C. S., A. G. O. S. O. 95, Department of the South, June 16, 1879.

Paulding, H. O., First Lieutenant and Assistant Surgeon.—Now awaiting orders at Washington, D. C., assigned to temporary duty at Fort McHenry, Md., relieving Assistant Surgeon W. B. Brewster. S. O. 160, A. G. O., July 10, 1879.

Adair, G. W., First Lieutenant and Assistant Surgeon.—Granted leave of absence for two months and fifteen days. S. O. 145, A. G. O., June 20, 1879.

Wilcox, T. E., First Lieutenant and Assistant Surgeon.—Assigned to duty as Post Surgeon, Boise Barracks, Idaho Territory, relieving Assistant Surgeon William R. Hall. S. O. 64, Department of the Columbia, June 5, 1879.

Terrill, H. S., First Lieutenant and Assistant Surgeon.—Granted leave of absence for two months. S. O. 148, A. G. O., June 24, 1879.

Hall, **William** R., First Lieutenant and Assistant Surgeon.—Assigned to duty with Major Greene, First Cavalry, commanding troops in the field at Camp Winfield Scott, Kittitas Valley, W. T. . S. O. 64, C. S., Department of the Columbia.

Davis, **William** B., First Lieutenant and Assistant Surgeon.—Temporarily detached from Fort Totten and assigned to duty at the supply depot, to be established at Fort Peck. S. O. 64, Department of Dakota, June 15, 1879.

Powell, J. L., First Lieutenant and Assistant Surgeon.—The order relieving him from duty at Fort Griffin, Texas, etc., suspended until further orders. S. O. 130, Department of Texas, June 21, 1879.

Brewster, W. B., First Lieutenant and Assistant Surgeon.—When relieved, to report by letter to the Surgeon General. S. O. 160, C. S., A. G. O.

Drs. John J. Kane, J. M. Banister, William B. Brewster, Aaron H. Appel, Charles Richard, and W. F. Carter, having been found qualified by the Army Medical Board, in session in New York City, have been appointed Assistant Surgeons, U. S. A., with the rank of First Lieutenant, to date from June 3, 1879.

Yeomans, A. A., Captain and Assistant Surgeon.—Having been found by an Army Retireing Board incapacitated for active service, granted leave of absence until further orders on account of disability. S. O. 141, A. G. O., June 14, 1879.

Obituary.

John Thomson Darby, M. D., late Professor of Surgery in the Medical Department of the University of the City of New York, died on Monday, June 9th, after a lingering illness. He was born at Pond-Bluff Plantation, St. Matthew's Parish, S. C., on the 16th of December, 1836, and was a descendant from English colonial residents of the province of the Carolinas. He pursued his first regular course of medical lectures at the Medical College of Charleston, and graduated as a doctor of medicine at the University of Pennsylvania in 1859, having been a private student of Professor Leidy. He practiced medicine in Philadelphia until the breaking out of the civil war, when he returned to his native State, and was at once appointed surgeon in the Confederate army. He served in the field from May, 1861, until the surrender in May, 1865, having held, in succession, the position of surgeon to the Hampton Legion, and chief surgeon and medical director in various commands of the armies of Virginia and Tennessee. During the war he was sent to Europe on a mission connected with the Medical Department of the Confederate States, where he devoted four months to a general study of the hospitals of London and Paris. At the close of the war he returned to Europe, and pursued his studies, both in the hospitals of Great Britain and of the Continent. He served as a volunteer field surgeon in the Prussian army during the German war of 1866. In 1868, while still absent in Europe, he was elected to the chair of Anatomy and Surgery in the University of South

Carolina, and, on his return, established himself in Columbia. He subsequently resigned this position, and, in 1873, accepted the professorship of Surgical Anatomy in the Medical Department of the University of the City of New York. In the following year he was elected Professor of Surgery in the same institution, which position he held until a short time before his death, when he was made Emeritus Professor. At the time of his death he held the position of Visiting Surgeon to Bellevue and Mount Sinai Hospitals of New York, and was a Member of the Medical Society of the County of New York; the New York Academy of Medicine; the Academy of Sciences, Philadelphia; Permanent Member of the American Medical Association; and member of several local medical societies. He was also ex-President of the State Medical Association of South Carolina. Among his contributions to medical literature the more prominent are: "A Thesis on the Anatomy, Physiology, and Pathology of the Supra-Renal Capsules;" "Campaign Notes on the German War of 1866;" "Horse-hair as a Ligature and Suture;" "Liquid-Glass as a Surgical Dressing;" and "The Trephine in Traumatic Epilepsy."—"Medical Record."

Dr. F. F. Maury, a prominent and talented Philadelphia surgeon, died June 4th, in Philadelphia, in the thirty-ninth year of his age, of congestion .of the lungs. Between two and three months ago Dr. Maury accompanied the late Colonel Samuel S. Moon on a trip to the Hot Springs, Arkansas, where Colonel Moon went for his health, Dr. Maury traveling with him as medical adviser. When he left the city, Dr. Maury's wife was in perfect health, but was seized with acute peritonitis during his absence, and died just before he returned home. Overwhelmed with grief at this sudden loss, he was soon afterward taken sick himself, and continued to grow worse until he was seized with the attack which carried him off. Dr. Maury was born in Danville, Kentucky, on the 4th of August, 1840. His father was a clergyman, a native of Virginia, and descended from a French Huguenot family. The deceased was educated at Center College, Danville, and graduated in 1859. He attended his first course of lectures at the medical department of the University of Virginia, but went the next year to Philadelphia, and graduated at Jefferson Medical College in 1862. Since his graduation, Dr. Maury has always lived and practiced in Philadelphia. He was the first surgeon in the United States to perform the operation of gastrotomy. Dr. Maury edited "The Photographic Bureau of Medicine and Surgery" for two years, and published a number of reports of medical and surgical cases. He was surgeon to the Jefferson Medical College Hospital, and it was largely through his efforts that this hospital was established. He was also one of the surgeons to the Philadelphia Hospital, and during the war was Surgeon-in-chief of the United States Army Hospital at Twenty-fourth and South Streets, Philadelphia. He was lecturer on venereal and cutaneous diseases in Jefferson Medical College, and was also a fellow of the Philadelphia College of Physicians and member of the Pathological Society.

TILBURY FOX, M. D.—The profession has suffered a severe loss in the death, at the early age of forty-three, of this distinguished physician. Dr. Fox passed through a brilliant career as a student, gaining a number of honors and prizes. Early in his professional life he gave much attention to dermatology, and in 1863 published his first work on that class of diseases. From that time he applied himself with great energy to the development of dermatology, and became, as is well known, a highly successful author, teacher, and practitioner, in that department. His death was due to aortic disease, and, though sudden, does not appear to have been unexpected.

PROFESSOR PIORRY, who died recently in Paris, at about the age of eighty-five years, was for many years one of the most active and zealous members of the Academy of Medicine. He was formerly Professor of Internal Pathology, and afterward of Clinical Medicine, and also made numerous important contributions to medical journals and societies.

READING NOTICES.

FLINT'S TEXT-BOOK OF PHYSIOLOGY.

This work has been very favorably received by the profession; it is extensively used as a text-book, and two very large impressions of the first edition have been exhausted. Encouraged by the favorable reception of the first edition, no pains has been spared in its revision. All the errors and inaccuracies that have been discovered have been carefully corrected. A short account of experiments and views upon the "respiratory sense" and a new experiment showing the general rapidity of the circulation have been introduced, together with numerous other important additions and changes.

BILLROTH'S SURGICAL PATHOLOGY AND THERAPEUTICS.

Since the translation was revised from the sixth German edition, in 1874, two other German editions have been published. The present edition is made to correspond to the eighth German edition. Lister's method of antiseptic treatment is referred to in various places, and other new points that have come up within a few years are discussed. A chapter has been written on amputations and resections. In all there are seventy-four additional pages, with a number of new woodcuts.

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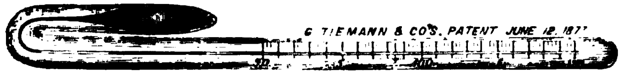
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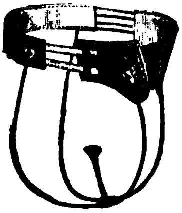

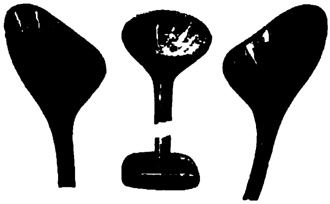

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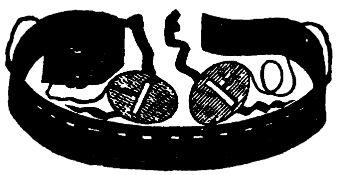

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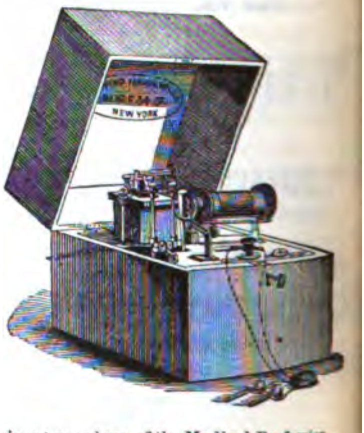

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It has come to our knowledge that certain articles extensively advertised as "pure" and "genuine extract of malt," are composed chiefly of the substance called GRAPE-SUGAR or MALTINE, which, as is well known, is the product of the action of sulphuric acid upon starch subjected to a

high temperature. This artificial grape-sugar or glucose, which is extensively manufactured from corn-starch, is now being used in immense quantities, instead of ordinary cane-sugar, in the sophistication of confectionery, sugar-house syrup, "strained honey," native wines, and canned fruits, and by some brewers in the manufacture of beer and ale. The cheapness of this artificial product of Indian-corn constitutes the chief inducement for this species of substitution for barley-malt and cane-sugar.

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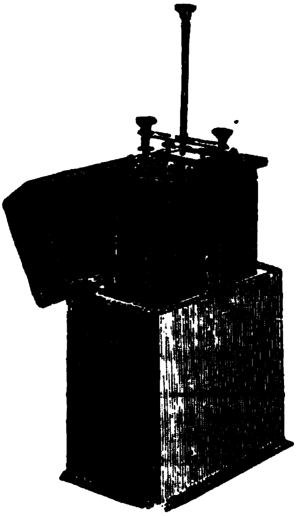

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MEDICINE AND THE COLLATERAL SCIENCES.

VOL. XXX.] SEPTEMBER, 1879. [No. 3.

Original Communications.

ART. I.—*Observations in One Hundred Cases of Carcinoma.*

By Dr. T. E. SATTERTHWAITE, Surgeon to the Demilt Dispensary, Pathologist to the St. Luke's and Presbyterian Hospitals, Lecturer on Morbid Anatomy, etc., at the Columbia Veterinary College and School of Comparative Medicine; and Dr. W. H. PORTER, Curator to the Presbyterian Hospital.

THIS paper is based upon one hundred unselected cases of carcinoma, most of which have come into the hands of one of the authors (Dr. Satterthwaite) through his official connections with the St. Luke's and Presbyterian Hospitals, the Pathological Society of New York, and the College of Physicians and Surgeons. Some have been derived from other sources, and acknowledgment is here made to Dr. G. L. Peabody, Pathologist to the New York Hospital, for permission given to inspect microscopic preparations, and for his assistance in securing their clinical histories. Thanks are also due to Dr. Abraham Mayer, Pathologist to the Manhattan Eye and Ear Hospital, for his drawings, which will be found represented in the text, and for his clinical history of a case; also to Dr. R. W. Amidon, formerly House Physician to the New York Hospital, for his drawings and case; also to Dr. Stoyell C. Parsons, for his painstaking exertions in securing a very large number of full clinical histories. It is a point of interest that every one of the cases has been followed by inquiries carried up to January 1, 1879, and that, in this way, fifty-seven have been completed from the inception of the disease to death. Though it might be desirable to have a larger number of cases from which to deduce conclusions, still it was thought best, at this time, to summarize, rather than to wait until a hundred fatal cases had been recorded in full. The difficulty in obtaining trustworthy information after death, to be used in a statistical way, is very great, and, indeed, in many cases is a matter of impossibility. In waiting, one has to run the chance of being forced to throw away much that has been collected. The authors have found, in the present instance, that large numbers of observations on this subject were sacrificed, mainly from the fact that the histories, which would have rendered them complete, had not been entered in hospital books, or had been recorded so imperfectly that they were of no value. It is proper to say, however, that important improvements have recently taken place in this respect, though even now the house staff is often too small to give the proper attention to this matter; consequently there is loss to our statistical information that can not be made up. While therefore these hundred cases are said to be unselected, in the sense that no one was omitted that promised to yield important data, there were fully fifty more which, for the reasons named, were unavailable. It will be seen by referring to the tables that ninety-five per cent. were examined microscopically, either by one of the authors alone, or in conjunction with competent microscopists in the city. It is believed, therefore, that the proper amount of precision has been reached in reference to the determination of the exact histological variety of the growth, and that, consequently, our conclusions will be based upon the most definite standard that can be applied at present. If they differ from those of Paget, Winiwarter, Thiersch, and others, it is due to the laws which govern cancer in our midst, i. e., cancer as it is recognized at present by the most certain criterion, viz., the microscope.

With reference to the present standard authorities, it is proper to say, however, that Paget nowhere states whether his two hundred and seventy-six cases of scirrhus, observed by himself, had been examined microscopically; and further, these statistics are based on cancers (*see* p. 634, "Surgical Pathology," 1870) of the breast. It may also be said of Winiwarter's cases that he does not tell whether the examinations were made by himself or others.

It is also evident that in the older classes of statistics, as those of Birkett,* the close distinction between carcinoma, sarcoma, myxoma, adenoma, and fibroma, now essential, was not maintained.

It is to be said here that, in using the word cancer, reference is always made to carcinoma, and to no other of the malignant growths, such as sarcoma, myxoma, etc., that are included by some English writers under the name of cancer.

The main object in preparing this paper was a practical one, and involved the following considerations: 1. Whether the microscope may be used as a means of accurate diagnosis. 2. Whether treatment by the knife secures for the patient the longest expectation of life. 3. What has proved to be the best treatment.

Though the results are not as satisfactory as the authors desired, still it is believed that some practical conclusions of value will be drawn. Unfortunately there exist at present insurmountable difficulties in obtaining solutions to some of the most interesting questions. The most remarkable cases can best be studied in the appended tables, where each is analyzed.

The operators have been as follows: Dr. Alfred C. Post, 12 cases; G. A. Peters, 9; C. K. Briddon, 7; J. L. Little, 4; T. E. Satterthwaite, 4; Weir, 4; C. M. Allin, 3; Gurdon Buck, 3; Markoe, 3; Sabine, 3; Sands, 3; Shrady, 3; McBurney, 2; D. M. Stimson, 2; L. A. Stimson, 2; A. H. Buck, Detmold, Dumond, Hanks, Hinton, Kelsey, Newman, Mount, H. D. Noyes, Polk, Beverley Robinson, R. W. Taylor, 1 each.

The classification adopted is essentially practical, and, in fact, is recognized, if not adopted, by leading pathologists.

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* "Diseases of the Breast," 1850.

It divides carcinoma into five groups, viz.: 1. Epithelioma; 2. Scirrhus; 3. Encephaloid or medullary; 4. Colloid; 5. Cauliflower growths.

1. The epitheliomata include the forms known in Germany as the flat or superficial epithelioma, in England as the rodent ulcer, and in various places as the lupoid, though the latter name is apt to lead one away toward a lesion whose nature is fundamentally different. This latter variety (rodent ulcer) is most frequently seen about the face, especially in the neighborhood of the eye. There is no doubt that it has, at times, been confounded with lupus vulgaris, and its diagnosis in any case is more difficult than any other of the forms with which we have to deal. To this point we shall again refer. Indeed, we are usually called upon to differentiate it from either lupus or syphilis, both of which are apt to invade the face and destroy progressively. The distinction is thus characterized:

"Lupus occurs in the young adult; rodent ulcer in the decline of life. Lupus is a strumous affection; rodent ulcer originates in persons previously healthy. Lupus commences as a low tuberculous elevation of the skin; rodent cancer as a firm, uncolored nodule."—"In lupus there may be more than one tubercle; the pimple of rodent cancer is solitary. Lupus first scales before it breaks; rodent cancer excoriates and then scales and bleeds. Lupus may cicatrize and heal at any time; rodent cancer proceeds with, at most, but a temporary and partial healing near the edge. Syphilis is rapid; rodent cancer slow. There is no solid border, but a sharp edge; in syphilis it is a ragged ulcer, surrounded by a violet halo of injected skin. It has no hardness or even firmness. In the early stage it is difficult to distinguish from epithelial cancer, certainly until infection occurs. The microscope invariably displays, in epithelial cancer, cells of an exaggerated epithelium, which are usually, though not constantly, absent in the rodent."—(Moore, "Rodent Cancer," London, 1867.)

According to Mr. Arnott ("Cancer, its Varieties," etc., London, 1872) rodent cancer does not possess sufficiently distinct characteristics to warrant its being relegated to a separate class. Indeed, taking well-marked examples of rodent ulcer, Mr. Arnott has found in them, occasionally, those "bird's-nest" formations which are the crowning peculiarity of epithelioma.

Mr. Hulke has also found in his examinations that the characters were those of a dense infiltration of the submucous connective tissue, with masses or bead-like processes, having cellular elements similar to those of the rete mucosum. This we have also observed, and our present conviction is that we have to do with a growing inward of the rete, but for some reason, which in some way depends upon the locality of the growth, it does not extend as rapidly or as deeply as the typical form in well-advanced epithelioma of the lip, and we consequently fail to find the epidermic balls which are a constant accompaniment of the other variety, and have very justly come to be regarded as pathognomonic. We are glad to be able to know that many other excellent observers take this view.*

The accompanying drawings (Figs. 1 and 2) are by Dr. A. Mayer; the clinical character of the growth was determined by Dr. R. W. Taylor, Professor of Dermatology in the University of Vermont.

It is stated in the description of the case by Dr. Mayer that this growth may be classed under the epitheliomata, though it would be known clinically as a rodent ulcer, and possesses no "nests." In Fig. 1 the papillæ are infiltrated, though not to a large extent, by epithelial elements; some of them, as at *a*, are massed together forming a small colony, and "may be a proliferation of cells in the vicinity of a blood-vessel." Underneath the papillæ there is an immense cell infiltration, round and oval, epithelial in character. In Fig. 2 a deeper infiltration of epithelial cells is seen. This in the main tallies with the ideas entertained by the authors cited, that rodent ulcer is a low or mild form of epithelioma, in which, as before said, the "birds'-nests" do not occur, and it is because the production of epithelial elements is not particularly active or rapid. A still lower form of epithelioma is now classed as the epithelial wart. They often occur as brown excrescences on the faces of old people. If burned down they appear again. In occasional instances it would appear that they take on an exuberant growth and become destructive epitheliomata. Removal by the knife is recommended when they take on an active growth, and is undoubtedly the best form of treatment. It appears by no means certain, as the histories of our cases show, that we can always, or even in most instances, determine the exact character of a rodent ulcer by the microscope. Though it bears the evidence of being made up of collections of elements that resemble epithelium, and we even find small collections at scattered points, the diagnosis should rest largely upon the gross appearances, the past history, and especially the effect of antisyphilitic remedies. It will be found in the record of one case that even antisyphi-

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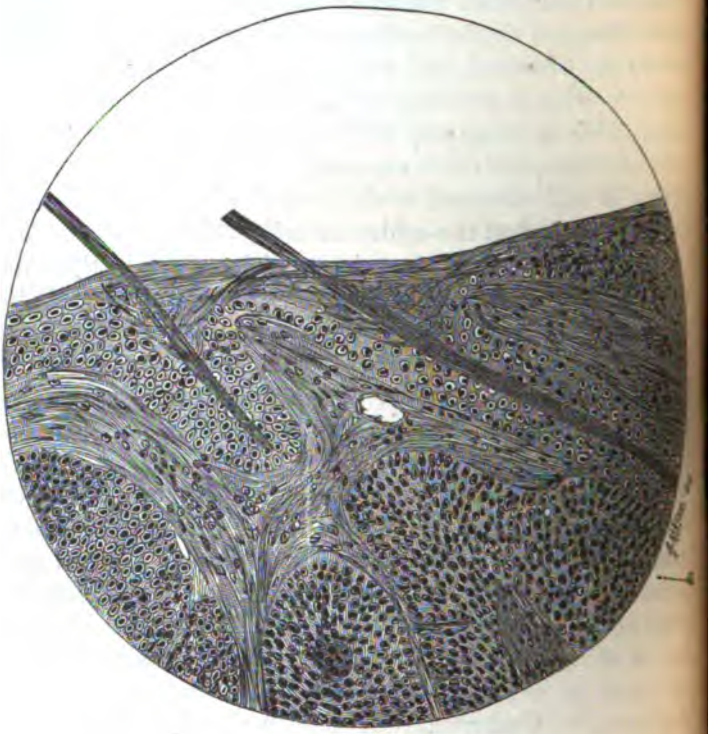
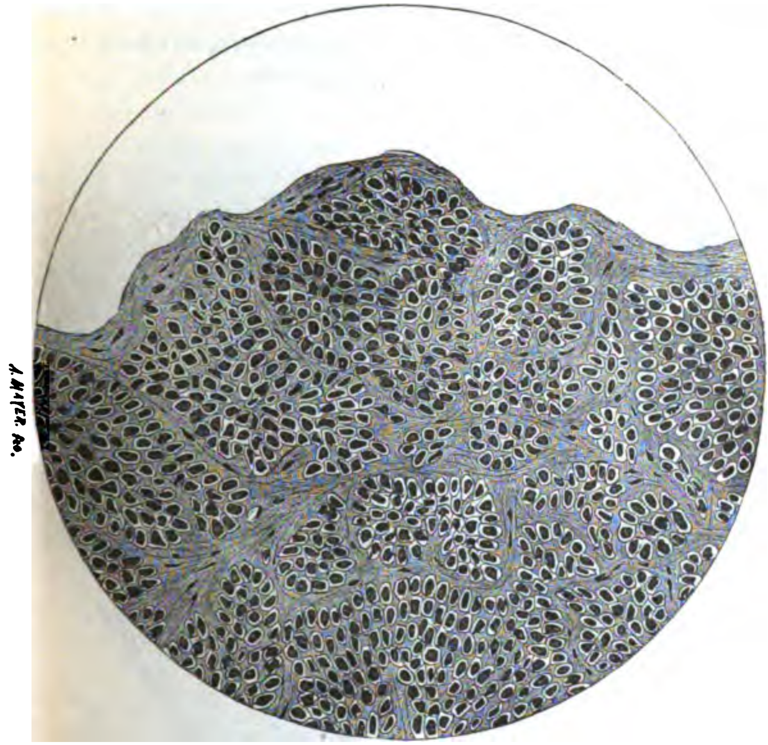
* Warren, "Boylston Medical Prize Essay," Boston, 1872. Tilbury and Thomas Fox, who also believe that the growth originates from the hair sheath, by a process of budding.—"Lancet," December 28, 1878.

FIG. 1.



litic treatment will not at once differentiate when syphilis is suspected, for an epithelioma will sometimes improve under the mercurials and iodides for a short time. If, however, it heals progressively under treatment, it is a case of syphilis. Usually the gross appearances, as already given, will furnish sufficient data to determine which of the three diseases we have to deal with; we should, however, search for a new formation of epithelial elements, and, finding them, we may be pretty confident, if the other data fail us, that we have to do with one of the forms of the epitheliomata.

FIG. 2.



On the other hand, if we fail to find the epithelial collections, we should not, therefore, be confident that the disease is not rodent ulcer (epithelioma). In one form of epithelioma, as our cases show, there may be times, as in the early period or if the destruction of tissues has about kept pace with its new formation, when no epithelial nests may be found. In the one instance they have not yet developed, in the other they have been thrown off. If, however, the microscopic section reveals epithelial nests, you may be almost positively sure not only that you have had a real case of epithelioma, but that it will return and advance progressively to death.

FIG. 3.

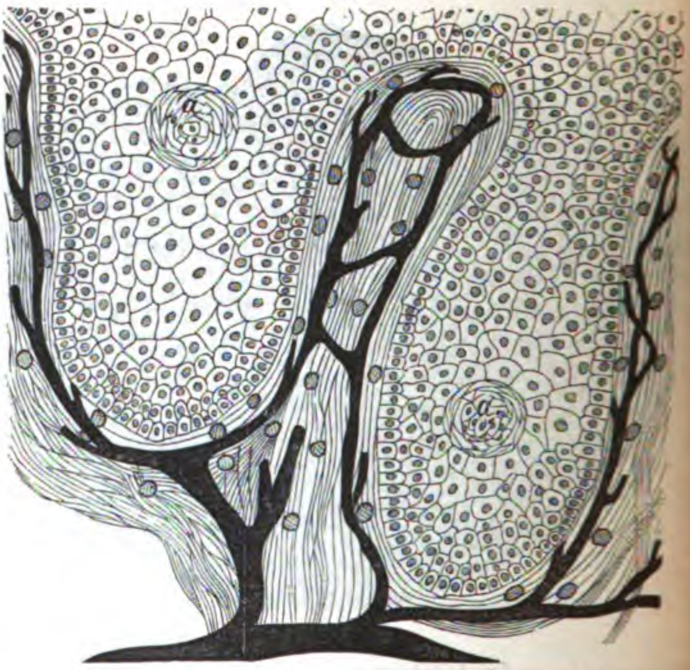


Fig. 3 represents an epithelioma. It will be seen in this instance, that the development of nests takes place in the interpapillary spaces, and it is here chiefly that they are found —certainly before extensive ulceration has removed them and the adjacent papillæ. At the same time that this growth and reproduction takes place in the elements of the Malpighian layer, similar changes take place in all the epithelial structures adjacent, viz., the sweat and sebaceous glands and hair follicles. The birds'-nests, *a a*, are nothing but the epithelial elements, so compressed concentrically that they are forced into round balls, and made dense, dry, and horny by the excessive pressure to which they have been subjected. In our experience we have never seen anything that could be mistaken for them in any other normal or pathological condition of the body. As illustrating the exact place in which the balls are usually found, it may be said that they will very generally be found surrounded by "prickle cells," or in other words, the epithelial elements of the Malpighian layer.

2. *Scirrhous Carcinoma.*—The most common of all carcinomas in our experience is scirrhous, of which we found forty-one in one hundred cases. There are many varieties, such as the nodular, diffuse, *en cuirasse*, atrophic, etc. It is most commonly found in the female breast. The clinical history will be given at some length further on. When the microscopic section is examined, it presents characters that differentiate it easily from any other pathological conditions. One sees collections of epithelial bodies grouped together in masses or irregular forms, or, if the section favors it, it may be seen that there are hollow networks filled exclusively by epithelial bodies. These branching spaces are irregularly pouched, and bear more resemblance to dilated lymphatic vessels than to anything else. The epithelial elements are closely crowded together without intervening material, and they take the form that is the result of the pressure. The presence of nuclei is not essential, as will be seen in the accompanying figures, where there are almost no nuclei. For this particular specimen no acetic acid was used, and hence the nuclei are not very apparent. Some of the elements occasionally undergo a sort of colloid change, and others exhibit hollow spaces or vacuoles. The epithelial masses are kept widely separated from each other by a large amount of the connective tissue known as fibrillated, and if the growth is rapid there is an extensive infiltration of this tissue with lymphoid elements. These appearances are shown in the accompanying drawing (Fig. 4), which is as nearly as may be an exact copy of the microscopic section.*

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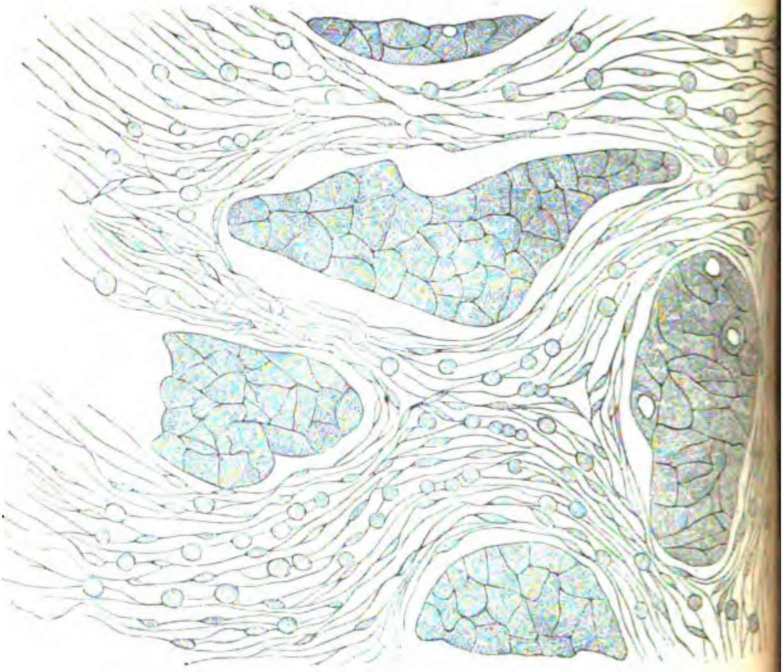
* Being desirous of securing as faithful a picture of the real appearances in the different forms of carcinoma as possible, thin sections were

The size of the epithelial elements has nothing to do with the determination of the growth, though in scirrhus of the breast they are usually large and have correspondingly large nuclei. But, as is well known, nuclei are not essential elements in cells, as they may be evoked by various agents, or caused to disappear by others, as electricity or a stream of oxygen gas. The only neoplasm that is sometimes difficult to distinguish from scirrhus is adenoma; now, this latter is a rare affection in the first place, and in the second, one that is easily differentiated by a glance at the interior of the epithe-

Fig. 4.



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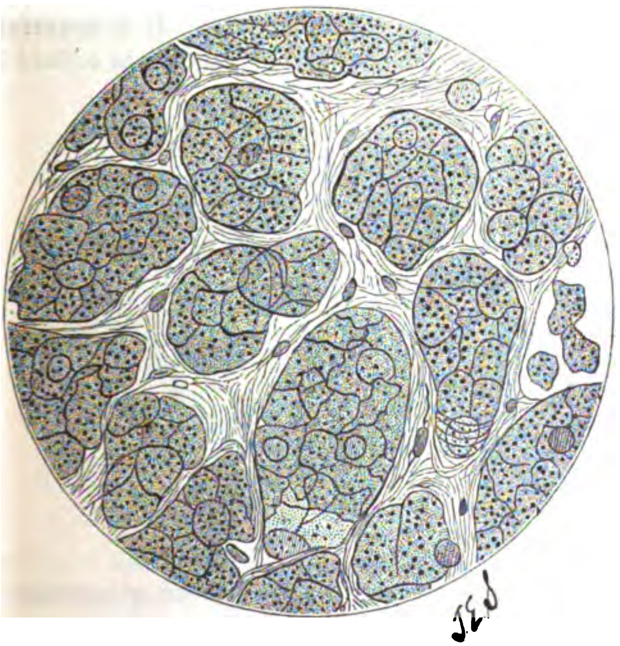
photographed by a well-known gentleman of this city. Much labor and pains were spent upon them, but they proved to be useless, possessing neither sufficient sharpness, flatness, nor depth. These defects in photography, the authors believe, have not been surmounted at present, and the most truthful pictures are still those that are drawn by a careful observer from the eye-piece of his microscope.

lial masses; in adenoma they are pierced, in carcinoma they are solid. Adenoma presents the appearances of ordinary secreting gland structure.

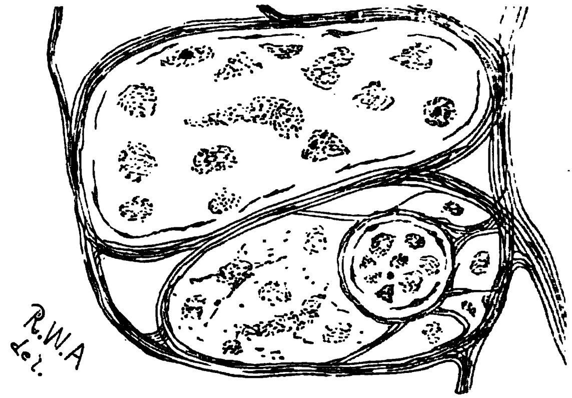
3. *Encephaloid or Medullary Carcinoma.*—This is commonly supposed to be the most rapid in growth and malignancy of all forms. It is apt to be found in the internal organs, such as the liver, omentum, etc., either primarily or in connection with scirrhus of external parts, as the breast. Some curious facts in reference to it have been found in individual cases. It is quite often not detected or suspected during life. The histological character of medullary cancer is clear and unmistakable. The epithelial elements are grouped together closely, as in scirrhus, but the intervening fibrous tissue is very slight, and often hardly more than sufficient to keep the masses separate from one another. The gross appearances are therefore quite different, for while scirrhus is firm, hard, gristly, cutting often much like a potato, encephaloid is soft, almost to liquefaction, and much like brain matter, hence its name.

FIG. 5.



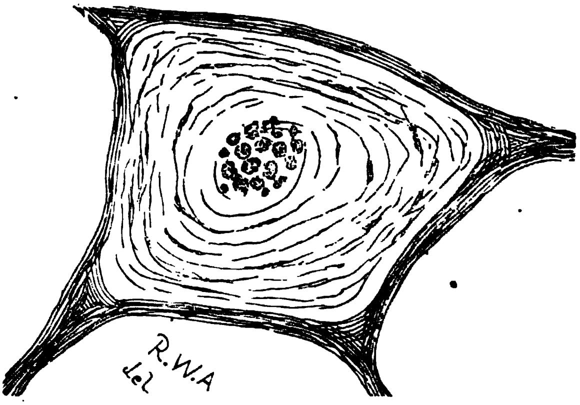
The accompanying drawing (Fig. 5) was taken from such a specimen, and is a good example of the disease. Sometimes there are forms that partake of the characters of both scirrhus and encephaloid, but this is comparatively rare.

FIG. 6.



4. *Colloid Carcinoma* is a peculiar and rare variety, found most frequently in the intestinal tract. It is doubtful if it ever occurs purely as a colloid. If the form is colloid in one part it is apt to be scirrhus or encephaloid at another. The accompanying drawings (Nos. 6, 7, 8, and 9), by Dr. R. W.

FIG. 7.



Amidon, illustrate the various appearances under which it is een. The epithelial elements are grouped together in masses, nd, undergoing the colloid change, are disposed to arrange hemselves concentrically in the tubes which contain them. Often, as in Fig. 6, the outlines of the corpuscles are extremely indistinct, and the concentric disposition of the elenents is not clear.

FIG. 8.

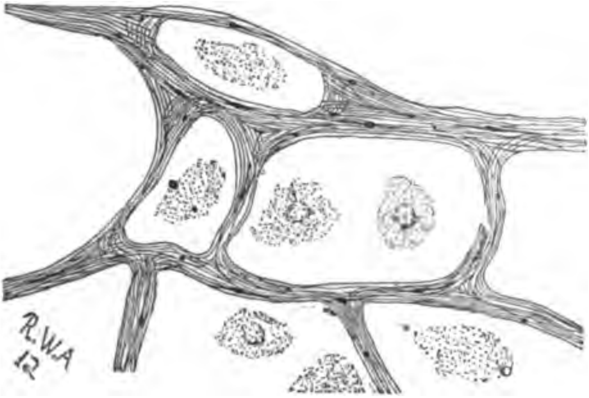
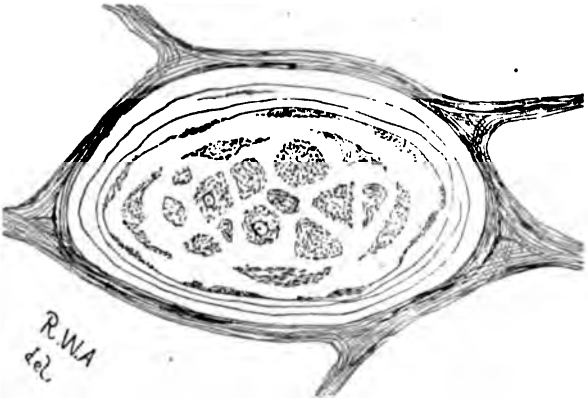


FIG. 9.



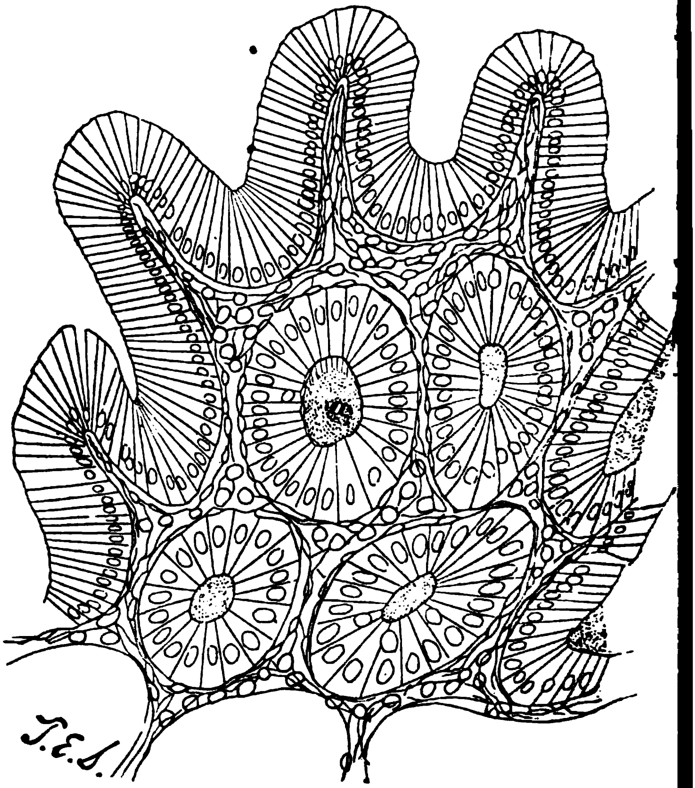
In Figs. 7 and 9 the epithelial elements are arranged in concentric laminæ.

In Fig. 8 the spaces contain one or more degenerate epithe-

lial bodies, which are surrounded by structureless soft colloi
matter not here represented.

5. *Cauliflower Growths.*—It is often difficult to gain
satisfactory idea of the neoplasms found in the uterus a
known as cauliflower growths. The difficulty has been owi
mainly to the fact that the portions removed by the surgeo
and given to the microscopist for examination are shreds to
off from the surface, and do not exhibit the real characters
the deeper structures; or it may be that the growth is as y
undeveloped and does not contain anything peculiar.

FIG. 10.



One often finds in such cases nothing but the enlar d
elongated papillæ, with an excessive epithelial cover

each stalk. It must be remembered, however, that such appearances belong also to papillomata, which are quite benign, at least in their inception. If we look down into the mucous and submucous or muscular layer, we shall be apt to find the collections of epithelial bodies, that now form our criterion for deciding on the name of the growth, closely packed together. Such, at least, is our notion of a classical case; but, as in most instances we are unable to get the whole diseased mass, the microscopic examination is apt to yield negative results. Fig. 10 illustrates such a case, and it will frequently resemble the real appearances, as they are seen. It is a representation of nothing in reality but a papillary growth. It consists of one or more stout stalks of great length, made up of ordinary fibrous tissue, and giving off at acute angles numbers of smaller branches and branchlets, all of them covered with cylindrical epithelium. At *a* there is a cross-section of an interpapillary space, which looks like the cross-section of a follicle, and is in fact one, since the mucous follicles are mere indentations of the mucous membrane, such as these are.

In drawing our conclusions it has seemed best to limit them to the scirrhus and epithelioma group, because the others included too few cases for any such use. At the same time they will all be found arranged in tabular form, so as to permit ready reference.

In taking up the matter of scirrhus, attention is first drawn to those that were accessible to the knife, so that the questions of operative interference in these more common cases may be duly considered apart by themselves.

EXTERNAL SCIRRHOUS

No. of Case.	Initials.	Age.	Sex.	Birthplace.	Condition.	Occupation.	Date when the growth was first noticed.
1	A. M.	43	M.	Scotland.	Married.	Saddler.	Oct., '73.
2	L. C.	48	F.	Ireland.	Married.	Housewife.	Sept., '71.
3	Mrs. P.	40	F.	England.	Married.	Housekeeper.	April, '76.
4	C. M.	46	F.	Switzerland.	Married.	Washerwoman.	March, '77.
5	M. R.	45	F.	Ireland.	Married.	Servant.	Nov., '78.
6	E. S.	36	F.	England.	Married.	Housewife.	Dec., '73.
7	H. M.	45	F.	United States.	Single.	Dressmaker.	April, '73.
8	S. T.	45	F.	United States.	Married.	Housewife.	Oct., '74.
9	E. W.	66	F.	England.	Widow.	Not stated.	Oct., '77.
10	A. K.	35	F.	United States.	Married.	Housewife.	Feb., '78.
11	Mr. K.	61	M.	United States.	Widower.	Clothier.	Oct., '78.
12	C. H.	50	F.	Ireland.	Single.	Milliner.	Oct., '74.
13	W. P.	46	F.	Ireland.	Married.	Seamstress.	Jan., '73.
14	M. A. W.	48	F.	Ireland.	Widow.	Cook.	Jan., '79.
15	E. T. S.	68	F.	United States.	Widow.	Not stated.	Nov., '78.
16	Mrs. A.	38	F.	Ireland.	Married.	Housewife.	May, '75.
17	Mrs. L.	76	F.	Not stated.	Married.	Lady.	Sept., '75. Sept., '59.
18	Mrs. C. S.	56	F.	United States.	Married.	Nurse.	Dec., '73.
19	J. R.	44	M.	Not stated.	Not stated.	Carpenter.	Dec., '72.
20	A. G.	42	F.	Ireland.	Single.	Child-nurse.	Jan., '77.
21	H. B.	37	F.	Ireland.	Married.	Housewife.	Aug., '77.
22	A. F.	42	F.	England.	Widow.	Dressmaker.	April, '73.
23	M. J.	43	F.	Ireland.	Single.	None.	Feb., '73.
24	S. S.	36	F.	Ireland.	Single.	Dressmaker.	Sept., '78.
25	E. A.	68	F.	Ireland.	Single.	None.	March, '73.
26	M. A. J.	53	F.	New York.	Married.	Lady.	Dec., '75.
27	C. F. C.	50	F.	United States.	Married.	Lady.	Dec., '71.
28	R. R.	44	F.	United States.	Single.	Housekeeper.	March, '73.
29	A. McK.	52	F.	Ireland.	Married.	Housekeeper.	Jan., '75.
30	C. S.	48	F.	New York.	Widow.	Housekeeper.	Aug., '76.
31	A. S.	51	F.	England.	Married.	Housekeeper.	Jan., '77.
32	Mrs. S. J.	36	F.	....	....	....	....
33	Mrs. M. B.	47	F.	New York.	Widow.	Housewife.	Aug., '76.
34	Mrs. D.	65	F.	Scotland.	Married.	Seamstress.	March, '75.
35	Mrs. A. McN.	60	F.	Ireland.	Widow.	Not stated.	Oct., '77.
36	Mrs. C. H.	36	F.	Germany.	Married.	Housewife.	July, '74.
37	K. O. C.	28	F.	Ireland.	Married.	Housewife.	Oct., '72.
38	M. A. P.	55	F.	United States.	Married.	Not stated.	Not stated.
39	C. O'B.	65	F.	Ireland.	Married.	Housewife.	June, '77.
40	F. B.	59	M.	Germany.	Not stated.	Cabinetmaker.	Dec., '72.
41	G. O. K.	60	M.	United States.	Married.	Agent.	Dec., '76.

CARCINOMA.

Locality.	Assigned cause.	Family history of cancer.	Enlargement of lymphatic glands.	Locality and name of glands involved.	When first noticed to be enlarged.
Right Steno's duct.	None.	None.	None.	....	....
Right breast.	Abscess 26 y'rs ago.	None.	None.	....	....
Os uteri.	None.	None.	None.	....	....
Right breast.	None.	Yes; also of phthisis.	Yes.	Axillary and supra-clavicular.	June, '78.
Breast.	Cold.	Not stated.	Not stated.	....	....
Left breast.	Blow.	None.	....	....	....
Right breast.	Blow.	None.	Not stated.	....	....
Breast.	Not stated.	Yes.	Yes.	Axillary.	Oct., '74.
Inside the left nostril.	None stated.	Yes.	Not stated.	....	....
Right breast.	Severe exercise.	None.	Yes.	Axillary.	May, '76.
Right breast.	None.	Phthisis.	None.	....	....
Right breast.	Slight blow.	None.	Not stated.	....	....
Left breast.	Abscess.	Phthis. and Tumor.	Yes.	Axillary.	Feb., '74.
Right nipple.	Not stated.	None.	Not stated.	....	....
Ulcerated nipple.	None.	None.	Yes.	Axillary.	April, '77.
Breast.	Not stated.	None.	Yes.	Axillary.	Aug., '78.
Right breast.	None.	None.	Yes.	Axillary.	....
Left breast.					
Right breast.	Uncertain.	None.	Yes.	Axillary.	....
Neck.	Not stated.	Phthis. and syphilis.	Not stated.	....	....
Right breast.	None.	None.	Yes.	....	....
Right axilla; breast.	None.	Yes.	Yes.	Prim. axil.	Aug., '77.
Left breast.	None.	None.	Yes.	Axillary.	Nov., '78.
Left breast.	Injury 10 y'rs bef'e.	None.	Not stated.	....	....
Rectum.	None.	Yes; also phthisis.	None observed.	....	....
Left breast.	Not stated.	None.	Yes.	Axillary.	Sept., '78.
Left breast.	None.	Yes.	Yes.	Axillary.	Oct., '77.
Breast.	Not obtained.	Uncertain.	Yes.	Axillary.	Dec., '72.
Right breast.	Bruise.	None.	Yes.	Axill'y and sup. clav'r.	March, '76.
Left breast.	No cause known.	Yes.	Yes.	Axillary.	Jan., '77.
Right breast.	Abscesses.	Probably.	Yes.	Axillary.	Not stated.
Left breast.	Mammary abscess.	None.	Yes.	Axillary.	A few mos. bef. operation.
Breast.	....	....	....	....	....
Uterus.	None.	None.	None.	....	....
Left breast.	Hurt.	None.	Yes.	Axillary.	Not stated.
Left breast.	None.	None.	Yes.	Axillary.	July, '78.
Right breast.	Blow.	Yes.	None.	....	....
Right breast.	None.	None.	Not stated.	....	....
Right breast.	Blow.	None.	Not stated.	....	....
Left breast.	None.	None.	Yes.	Axillary.	Oct., '78.
Back.	None.	None.	Yes.	Axillary.	July and Aug., '78.
Superior maxilla.	Bad tooth.	None.	None.	....	....

EXTERNAL SCIRRHOUS

No. of Case.	Was any treatment adopted before operation?	Date of operation.	Condition of general habit previous to symptoms of case.
1	No.	April, '77. November, '78.	Syphilis.
2	Local anodynes.	September, '78.	Gen'l debility for 3 years.
3	Not stated.	September, '74.	Syphilis.
4	No.	June, '78.	Good.
5	Not stated.	December, '78.	Not stated.
6	Anointed and rubbed by quack.	Aug., '76; Sept., '77.	Good.
7	Not stated.	May, '74.	Good.
8	No.	October, '76.	Good.
9	No.	October, '78.	Good.
10	Not stated.	June, '76.	Good.
11	Fowler's solut'n.	October, '78.	Tertiary syphilis.
12	Not stated.	Jan., '75; May, '76.	Fair.
13	Not stated.	June, '74.	Good.
14	Leeching.	Dec., '72; Aug., 78; Oct., '78.	Good.
15	Electrolysis.	November, '78.	Good.
16	No.	May, '78.	Good.
17	....	July, '75; Oct., '77; Feb., '78.	Good.
18	Electrolysis.	No cutting operation.	Good.
19	Incision.	April, '78.	Not stated.
20	Not stated.	July, '77.	Good.
21	No.	September, '78.	Good.
22	Not stated.	January, '74.	Good.
23	Arsenical paste.	February, '74.	Good.
24	No.	September, '78.	Chronic diffuse nephritis
25	No.	March, '77; Nov., '77; Feb., '78; May, '78.	Cephalalgia.
26	Not stated.	October, '76.	Good.
27	Pressure.	June, '72.	Good.
28	No.	March, '78.	Good.
29	Not stated.	January, '78.	Good.
30	Not stated.	April, '77; Jan., '78; June, '78; Sept., '78.	Good.
31	Arsenic intern'y.	June, '77.	Good.
32	....	June, '76.	Not stated.
33	Not stated.	October, '76.	Good.
34	No.	August, '78.	Always poor.
35	Not stated.	July, '78.	Good.
36	No.	May, '76.	Good.
37	Not stated.	April, '75.	Good.
38	Not stated.	November, '76.	Good.
39	No.	October, '78.	Good.
40	White paste.	Feb., 78; August, '74.	Good.
41	Poult'd and lan'd.	April, '77.	Good; hard drink

CARCINOMA.

Was pain relieved by the operation?	Was the growth more rapid when it recurred?	Date of recurrence.	Interval between period when first noticed and first removal.	Number of recurrences.	Number of operations.
Yes.	Yes.	October, '77.	18 months.	One.	Two.
Yes.	....	....	12 months.	None.	One.
Yes.	Difficult to say.	February, '75.	5 months.	One.	One.
....	....	....	15 months.	....	One.
Yes.	....	....	1 month.	None.	One.
Yes.	Yes.	July, '77.	8 months.	Two.	Two.
Yes.	Yes.	Not stated.	49 months.	One.	One.
Somewhat.	Yes.	October, '76.	24 months.	One.	Two.
Partially.	Yes.	November, '78.	12 months.	One.	One.
No.	Yes.	August, '76.	4 months.	One.	One.
Yes.	....	....	60 months.	None.	One.
Partially.	Yes.	April, '76.	3 months.	One.	Two.
Yes.	Yes.	Not stated.	17 months.	One.	One.
Yes.	Yes.	April, '78.	47 months.	Two.	Three.
Yes.	....	....	24 months.	None.	One.
Yes; temporarily.	No.	August, '78.	24 months.	One.	One.
Yes.	....	....	214 months.	Four.	Three.
Yes.	....	....	....	....	....
Not stated.	....	....	4 months.	....	One.
Yes.	Not known.	....	6 months.	One.	One.
Yes.	....	....	18 months.	None.	One.
Partially.	Not stated.	Not known.	9 months.	One.	One.
Yes.	....	....	24 months.	None.	One.
....	....	....	24 months.	None.	One.
Partially.	Yes.	Not stated.	48 months.	Five.	Four.
For 1 year, yes.	No.	October, '77.	10 months.	One.	One.
Not stated.	Yes.	November, '72	6 months.	One.	Two.
For a time.	Yes.	June, '78.	24 months.	One (inc. remov'l.)	One.
Yes.	....	....	24 months.	None.	One.
Yes.	Yes.	November, '77.	8 months.	Four.	Four.
At first.	Yes.	July, '77.	5 months.	One.	One.
....	....	....	....	One.	One.
Part'y for a time.	Yes.	October, '76.	2 months.	One.	One.
Yes.	....	....	29 months.	None.	One.
....	....	....	9 months.	None.	One.
Yes, for a time.	Yes.	Not stated.	22 months.	One.	One.
Yes.	No.	Not stated.	18 months.	One.	One.
Yes.	Yes.	Not stated.	....	One.	One.
Yes.	....	....	16 months.	None.	One.
....	....	....	2 months.	One.	Two.
....	....	....	4 months.	....	One.

EXTERNAL SCIRRHOUS

No. of Case.	Extent of operations.	Interval between first removal and death.	Duration of the non-fatal cases.	Period from time from inception of external disease to death or last accounts.	Date of death.
1	1. Slight. 2. Extensive.	....	40 months.	40 months.	....
2	Amputation of breast.	....	17 months.	17 months.	....
3	Amputation of os uteri, and scraping out uterus.	6 months	....	11 months.	March, '73.
4	Amputation of breast; excision of lymphatic glands; cut'g axil. v'n.	5 days.	....	15 months.	June, '73.
5	Amputation of breast.	....	2 months.	2 months.	....
6	Amputation of breast; and 2, of new growth.	25 months.	....	33 months.	Sept., '73.
7	Amputation of breast.	16 months.	....	65 months.	Sept., '73.
8	Amputation of breast; and 2, cautery.	8 months.	....	22 months.	June, '71.
9	Extensive excision of the mass.	....	15 months.	15 months.	....
10	Amputation of breast.	4 months.	....	8 months.	Oct., '73.
11	Amputation of breast.	....	63 months.	63 months.	....
12	Amputation of breast; 2, of return growth.	16 months.	....	19 months.	May, '73.
13	Amputation of breast.	36 months.	....	53 months.	June, '71.
14	....	....	58 months.	58 months.	....
15	Amputation of breast, and removal of axillary glands.	....	26 months.	26 months.	....
16	Amputation of breast and axillary glands.	....	32 months.	32 months.	....
17	Amputation of breast; and 2, removal of enlarged glands.	....	256 months.	256 months.	....
18	....	....	....	46 months.	Oct., '71.
19	Extensive.	....	History incomplete.	....	....
20	Amputation of breast.	18 months.	....	24 months.	Jan., '73.
21	Amputation of breast.	....	18 months.	18 m., hist. incom.	....
22	Amputation of breast.	3 months.	....	12 months.	April, '73.
23	Amputation of breast.	22 months.	....	46 months.	Dec., '73.
24	Partial extirpation of the rectum.	10 days.	....	24 months.	Sept., '73.
25	Repeated extirpations.	....	69 months.	69 months.	....
26	Amputation of breast.	20 months.	....	30 months.	June, '73.
27	Amputation of breast.	....	35 months.	35 months.	....
28	Amputation of breast, remo'l of p't of glan's.	....	34 months.	34 months.	....
29	Amputation of breast.	....	36 months.	36 months.	....
30	Amputation of breast and return growths.	....	29 months.	29 months.	....
31	Amputation of breast.	13 months.	....	18 months.	July, '73.
32	Amputation of breast.	24 months.	....	....	June, '72.
33	Excision of the growth.	12 months.	....	14 months.	Oct., '71.
34	Amputation of breast.	....	34 months.	34 months.	....
35	Amputation of breast.	....	....	9 months.	....
36	Amputation of breast.	15 months.	....	37 months.	August, '71.
37	Amputation of breast.	29 months.	....	47 months.	Sept., '71.
38	Amputation of breast.	4 months.	....	....	March, '71.
39	Amputation of breast.	....	19 months.	....	....
40	1. Excision of wart; 2, of glands.	34 months.	....	36 months.	Dec., '73.
41	Excision of superior maxilla; tracheot'my.	None.	....	4 months.	April, '77.

CARCINOMA.

Cause of death.	Locality of recurrent growth.	Did the patient have any disease independent of cancer accelerating death?	Variety of disease.	Name of Examiner.
....	....	....	1. Fibroma.	Dr. Satterthwaite.
			2. Adeno-carc'a.	Drs. Satterthwaite and Porter.
....	....	....	Scirrhus.	Drs. Satterthwaite and Porter.
Exhaustion.	Bladder, uterus, and rectum.	Syphilis?	Scirrhus.	Dr. Satterthwaite.*
Septicæmia.	....	No.	Scirrhus.	Drs. Satterthwaite and Porter.
....	....	....	Scirrhus.	No examiner; clinical appearances were those of cancer.
Return of gro'th; exhaustion.	Cicatrix; internally.	No.	Scirrhus.	Dr. Satterthwaite.
Exhaustion.	Breast.	Phthisis.	Scirrhus.	Dr. Satterthwaite.
Exhaustion.	Cicatrix.	Not stated.	Scirrhus (adeno-carcinoma).	Dr. Satterthwaite.
....	Same pla'e.	....	Scirrhus.	Drs. Satterthwaite and Porter.
Exhaustion.	Cicatrix.	Not stated.	Scirrhus.	Dr. Satterthwaite.
....	....	....	Scirrhus.	Drs. Satterthwaite and Porter.
Exhaustion.	Cicatrix.	Not stated.	Scirrhus.	Dr. Satterthwaite.
Exhaustion.	Cicatrix.	Not stated.	Scirrhus.	Dr. Satterthwaite.
....	....	....	Scirrhus.	Dr. Satterthwaite.
....	....	....	Scirrhus.	Drs. Satterthwaite and Porter.
....	....	....	Scirrhus.	Dr. Satterthwaite.
....	....	....	Scirrhus.	Drs. Delafield and Satterthwaite.
Asthenia.	....	No.	Scirrhus.	Dr. Satterthwaite.
....	....	....	Scirrhus.	Dr. Satterthwaite.
Exhaustion.	....	Pleurisy.	Scirrhus?	Not examined.
....	....	....	Scirrhus.	Drs. Satterthwaite and Porter.
Pneum'a; pleur.	Not stated.	Pneu., pleu.	Scirrhus.	Dr. Satterthwaite.
Phthisis.	....	Phthisis.	Scirrhus.	Dr. Satterthwaite.
Uræmia.	....	Chronic dif. nephritis.	Scirrhus.	Drs. Satterthwaite and Porter.
....	....	....	Scirrhus.	Dr. Satterthwaite.
Exhaustion.	Cicatrix.	....	Scirrhus.	Dr. Satterthwaite.
....	....	....	Scirrhus.	Dr. Satterthwaite.
....	....	....	Scirrhus.	Drs. Stimson, Satterthwaite, and Porter.
....	....	....	Scirrhus.	Drs. Satterthwaite and Porter.
....	....	....	Scirrhus.	Drs. Satterthwaite and Peabody.
Exhaustion.	Cicatrix.	No.	Scirrhus.	Dr. Satterthwaite.
Exhaustion.	....	....	Scirrhus.	Dr. Satterthwaite.
Exhaustion.	Ute's, vag., blad'r, rect.	No.	Scirrhus.	Dr. Satterthwaite.
....	....	....	Scirrhus.	Dr. Satterthwaite.
....	....	....	Scirrhus.	Drs. Satterthwaite and Peabody.
Exhaustion.	Cicatrix.	No.	Scirrhus.	Dr. Satterthwaite.
Exhaustion.	Cicatrix.	Phthisis, nephritis, dropsy.	Scirrhus?	Dr. Satterthwaite.
Exhaustion.	Cicatrix.	Cardiac dis.	Scirrhus.	Dr. Satterthwaite.
....	....	....	Scirrhus.	Drs. Satterthwaite and Porter.
Left hæmiplegia.	Ax. glands; none after 2d. removal.	Left hæmiplegia.	Carcinoma simplex.	Dr. Satterthwaite.
Operation.	....	....	Scirrhus.	Dr. Satterthwaite.

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* The microscopic examination is incomplete; but the clinical history is that of scirrhus.

EPITHELIOMA.

No. of Case.	Initials.	Age.	Sex.	Birthplace.	Condition.	Occupation.	Date when the growth was first noticed.
1	E. C.	70	F.	Ireland.	Widow.	Housewife.	Not stated.
2	J. F.	67	M.	Scotland.	Married.	Shoemaker.	Nov., '75.
3	H. C.	72	M.	Germany.	Widower.	Silver-plater.	Nov., '77.
4	J. O'N.	65	M.	Ireland.	Married.	Varnisher.	April, '75.
5	A. C.	68	F.	Ireland.	Widow.	Housekeeper.	April, '65.
6	S. G.	61	F.	Ireland.	Single.	Housewife.	March, '64.
7	M. McD.	32	F.	England.	Married.	Housewife.	January, '77.
8	A. N.	39	M.	Not stated.	Not stated.	Merchant.	April, '71.
9	M. D.	42	M.	Ireland.	Single.	Bar-tender.	Sept., '77.
10	Wm. E.	68	M.	Ireland.	Married.	Baker.	June, '71.
11	E. M.	33	M.	Germany.	Married.	Baker.	Dec., '75.
12	J. C.	52	M.	Not stated.	Married.	Contractor.	May, '78.
13	A. D.	40	M.	Canada.	Widower.	Slater.	Dec., '77.
14	M. McC.	60	F.	Ireland.	Not stated.	Not stated.	'65.
15	G. M. C.	61	M.	New York.	Married.	Attorney.	August, '77.
16	J. T.	60	M.	Ireland.	Married.	Laborer.	April, '75. [May, '87 ?]
17	P. M.	61	M.	Ireland.	Married.	Laborer.	May, '76.
18	A. C.	31	M.	Prussia.	Married.	Jeweler.	April, '75.
19	T. S.	56	M.	Ireland.	Not stated.	Laborer.	July, '77.
20	A. B.	50	M.	England.	Married.	Barber.	Sept., '67.
21	J. McC.	43	M.	Ireland.	Not stated.	Coachman.	Feb'y, '74.
22	W. L. O.	48	M.	Not stated.	Not stated.	Merchant.	October, '73.
23	Wm. C.	46	M.	Ireland.	Married.	Laborer.	July, '75.
24	Mrs. McC.	27	F.	Scotland.	Married.	Housewife.	Nov., '76.
25	N. B.	44	M.	Switzerland.	Married.	Laborer.	March, '74.
26	S. L.	62	M.	New York.	Married.	Book agent.	Dec., '76.
27	J. Y. D.	65	M.	New York.	Married.	Farmer.	October, '78.
28	J. L.	40	M.	United States.	Married.	Laborer.	June, '75.
29	S. B.	67	F.	New York.	Widow.	Nurse.	Nov., '75.
30	A. B.	56	M.	United States.	Widower.	Druggist.	Feb'y, '77.
31	M. G.	41	M.	France.	Single.	Not stated.	Not stated.
32	Mrs. C.	68	F.	United States,	Married.	Housewife.	Not stated.
33	D. B.	60	M.	Ireland.	Single.	Carpenter.	January, '70.
34	E. S. B.	72	F.	Ireland.	Widow.	Housewife.	Not stated.
35	J. H.	65	M.	New York.	Married.	Clerk.	Not stated.
36	B.	52	M.	United States.	Married.	Merchant.	Feb'y, '71.
37	J. G.	63	M.	Canada.	Married.	Cooper.	Jan'y, '78.

EPITHELIOMA.

Locality.	Assigned cause.	Any family history of cancer?	What kind of pain did it produce?	Enlargement of lymphatic glands.	Locality and name of glands involved.
Floor of mouth.	Smoking pipe.	No.	Very little.	No.	....
Under tongue.	Smoking pipe.	No.	Sharp shooting.	None.	....
Lower lip.	Smoking pipe.	No.	Acute.	None.	....
Lower lip.	Smoking pipe.	No.	Not stated.	Not stated.	....
Upper eyelid.	None.	No.	Acute.	None.	....
Edge of the hair on forehead, left side.	Scratch from a tooth-comb.	No.	Slight.	None.	....
Tongue.	Decayed tooth.	Yes.	Severe.	None.	....
Palate.	Sore mouth.	Yes.	Not stated.	Yes.	Submaxillary.
Rectum.	None.	None given.	Severe.	No.	....
Lower lip.	Smoking pipe.	No.	None.	Not stated.	....
Nose.	None.	No.	Very little.	Not stated.	....
Lower lip.	Chewing a toothpick.	No.	Slight.	None.	....
Tongue.	Smoking and chewing and syphilis.	No.	Acute.	None.	....
Lip.	None.	Not stated.	Not stated.	Not stated.	....
Glans penis.	None.	Yes.	Acute.	No.	....
Lip.	Smoking.	No.	None.	....	....
Glans penis.	None.	No.	Acute.	Yes.	Inguinal.
Larynx.	Use of a blow-pipe.	No.	None.	....	....
Lower lip.	Pipe smoking.	No.	None.	....	....
Tongue.	Smoking pipe.	No.	Acute.	Yes.	Bronchial
Ear.	Frost-bite.	No.	Moderate.	None.	....
Cornea.	None.	No.	None.	None.	....
Nose.	None.	No.	Very little.	Yes.	Submax'y
Middle ear.	None.	No.	Aching, gnawing.	Yes.	....
Lower lip.	Smoking pipe.	No.	Acute.	Not stated.	....
Left corner of mouth.	Smoking pipe.	No.	None.	No.	....
Cheek and jaw.	Smoking pipe.	Yes.	None.	....	....
Middle of lower lip.	Smoking pipe.	Yes.	None.	....	....
Right labium.	Not stated.	Not stated.	Acute.	Not stated.	....
Left cheek.	Application of creosote.	No.	Acute.	None.	....
Neck.	....	....	....	....	....
Labia.	Not known.	No.	Acute.	None.	....
Left side of lower lip.	None.	No, but phthisis.	Itching, severe.	Not stated.	....
Face.	None.	No.	None.	None.	....
Inferior maxilla.	....	....	....	....	....
Glans penis.	None.	No.	None.	None.	....
Œsophagus.	None.	....	Dull.	None.	....

EPITHELIOMA.

No. of Case.	When first noticed to be enlarged.	Was any treatment adopted before operation?	Date of operation.	Condition of general health previous to symptoms of cancer.
1	....	Various applications.	....	Dyspepsia.
2	....	No.	Sept., '76.	Good.
3	....	....	Nov., '78.	Good.
4	....	Not stated.	April, '76.	Good.
5	....	Terchloride of antimony and other caustics.	Four operations, date not known.	Good.
6	....	Caustics several times.	March, '77, Sept., '77.	Good.
7	....	No.	June, '78.	Poor.
8	Dec., '78.	Pot. iodid. internally.	No operation, but a small piece cut off.	Poor and had syphilis.
9	....	Cauterized with silver nitrate.	July, '78.	Good.
10	....	Caustics.	June, '74.	Hemiplegia.
11	....	No.	April, '76.	Good.
12	....	Sugar of lead, glycerine, and terchloride of antimony.	None.	Good.
13	....	Cautery, leeching, pot. iodid., and arsenic.	March, '78.	Syphilis [illegible] years.
14	....	Terchloride of antimony.	No operative interference.	Good.
15	....	Burned with nitrate of silver.	April, '78.	Opium habit, hæmorrhoids.
16	....	No.	April, '76.	Good.
17	May, '77.	No.	May, '77.	Good.
18	....	Partial removal.	Oct., '76, Nov., '76.	Good.
19	....	No.	Jan'y, '78.	Good.
20	At autopsy.	Cautery and knife.	July, '72.	Good.
21	....	Quack applications.	Sept., '74.	Vigorous.
22	....	No.	Oct., '78.	Good.
23	Dec., '78.	Incision over mastoid process.	Jan'y, '76.	Good.
24	....	Excision of growth.	....	Good.
25	....	Salves.	June, '75.	Good.
26	....	No.	Dec., '77. Sept., Oct., Dec., '78.	Good.
27	....	Caustics.	April, '77.	Good.
28	....	Not stated.	June, '77, May, '78.	Good.
29	....	Not stated.	Dec., '76.	Good.
30	....	Not stated.	Nov., '77, May, '78, Aug., '78.	Good.
31	....	....	....	....
32	....	Caustics.	August, '72.	Good.
33	....	Not stated.	Jan'y, '71, June, '74.	Good.
34	....	Caustics.	August, '78.	Good.
35	....	....	....	....
36	....	No.	Aug., '71, May, '77.	Good.
37	....	Œsophageal bougies.	None.	Hard drinker

EPITHELIOMA.

Was pain relieved by the operation?	Was the growth more rapid when it recurred?	Date of recurrence.	Interval between period when first noticed and first removal.	Number of recurrences.	Number of operations.
....	....	....	....	None.	None
Not stated.	Not stated.	Not stated.	10 months.	One.	One.
Yes.	....	....	12 months.	None.	One.
Not stated.	....	....	12 months.	....	One.
Partially for a time.	Yes.	Not known.	Not known.	Five.	Four.
Yes.	Yes.	Not stated.	156 months.	Three.	Two.
Yes.	....	....	17 months.	None.	One.
....	....	....	....	....	None
Yes.	Yes.	Sept., '78.	10 months.	One.	One.
....	....	Not known.	36 months.	....	One.
Yes.	No return.	....	4 months.	None.	One.
Yes.	....	Dec., '78.	....	None.	None
Yes, for a time.	Yes.	May, '78?	3 months.	One.	One.
Yes.	Yes.	....	....	....	....
Yes.	....	....	8 months.	None.	One.
Yes.	....	....	12 months.	....	One.
Yes.	Yes.	Very soon.	[480 months.]	One.	One.
Yes.	....	....	12 months. 18 months.	One.	Three
Yes.	No return, Nov.,'78.	....	6 months.	None.	One.
No.	Yes.	August, '72.	58 months.	Several.	One.
Not stated.	Yes.	Sept., '74.	7 months.	One.	One.
....	....	....	60 months.	None.	One.
Yes.	Yes.	May, '76.	6 months.	One.	One.
....	....	....	....	....	....
No.	Yes.	June, '75.	15 months.	Two.	Two.
....	No.	Sept., '78.	12 months.	Four.	Four.
Yes.	Yes.	June, '77.	6 months.	One.	One.
Not stated.	Yes.	June, '77.	24 months.	Two.	Two.
Yes.	....	....	18 months.	Not stated.	One.
Yes.	Yes.	Dec., '77.	9 months.	Three.	Three
....	....	....	....	....	....
Not stated.	Not stated.	....	....	Not stated.	One.
....	Yes.	June, '78.	12 months.	One.	Two.
Nothing to relieve.	....	Oct., '78.	....	One.	One.
....	....	....	....	....	....
Yes.	No.	Jan'y, '71.	6 months.	One.	Two.
....	....	....	....	....	....

EPITHELIOMA.

No. of Case.	Extent of operations.	Interval between first removal and death.	Duration of the non-fatal cases.	Period from time of inception of external disease to death or last accounts.	Date of last
1	....	....	....	....	....
2	Excision of the growth.	9 months.	....	19 months.	June, '71.
3	Removal of growth and chelostomatoplasty.	....	14 months.	14 months.	....
4	Removal by V-shaped incision.	....	....	....	....
5	Not known.	....	....	154 months.	Feb'y, '78.
6	Not known.	....	178 months.	178 months.	....
7	Ligation of lingual artery and removal of growth.	1 month.	....	18 months.	July, '78.
8	Small piece snipped off.	....	....	36 months.	April, '74.
9	Extirpation of the rectum.	6 months.	....	16 months.	Jan'y, '78.
10	Slight.	....	36 months.	36 months.	....
11	Slight.	....	37 months.	37 months.	....
12	Local applications.	....	8 months.	8 months.	....
13	Ligation of both lingual arteries. Removal of half tongue.	8 months.	....	6 months.	June, '73.
14	Local applications.	....	168 months.	168 months.	....
15	Amputation of penis.	....	17 months.	17 months.	....
16	Removal of the growth.	....	12 months.	12 months.	....
17	Amputation of penis.	6 months.	....	[486 months.] 18 months.	Nov., '77.
18	Partial removal of larynx.	....	45 months.	....	....
19	Slight elliptical incision	....	16 months.	16 months.	....
20	Extirpation.	2 months.	....	60 months.	Sept., '72.
21	Slight.	....	59 months.	59 months.	....
22	Slight.	....	63 months.	63 months.	....
23	Slight.	....	42 months.	42 months.	....
24	....	....	....	8 months.	July, '77.
25	Extension.	4 months.	....	19 months.	October, '75.
26	No extension.	....	25 months.	25 months.	....
27	Extension.	6 months.	....	12 months.	October, '77.
28	1. Slight. 2. Extension.	....	48 months.	48 months.	....
29	Removal of both labia.	8 months.	....	21 months.	August, '77.
30	Moderate.	....	19 months.	19 months.	....
31	....	....	....	....	Jan'y, '7
32	Removal of labia.	5 months.	....	5 months.	Jan'y, '7
33	Both slight.	....	108 months.	108 months.	....
34	Slight.	....	....	....	....
35	....	....	....	....	August,
36	Amputation of penis.	....	95 months.	95 months.	....
37	....	....	....	6 months.	July, '

EPITHELIOMA.

Cause of death.	Locality of recurrent growth.	Did the patient have any disease independent of carcinoma accelerating death?	Variety of disease.	Name of examiner.
....	....	....	Epithelioma.	Not examined.*
Exhaustion.	Same place.	Not stated.	Epithelioma.	....
....	....	....	Epithelioma.	Drs. Satterthwaite and Porter.
....	....	....	Epithelioma.	Dr. Satterthwaite.
Exhaustion.	Same place.	Not stated.	Epithelioma.	....
....	....	....	Epithelioma.	Dr. Satterthwaite.
Exhaustion.	....	Phthisis.	Epithelioma.	Drs. Satterthwaite and Shrady.
Exhaustion.	....	Syphilis.	Epithelioma.	Dr. Satterthwaite.
Exhaustion.	Same spot.	No.	Epithelioma.	Drs. Satterthwaite and Stimson.
....	....	....	Epithelioma.	....
....	....	....	Epithelioma.	Dr. Satterthwaite.
....	....	....	Epithelioma.	Dr. Satterthwaite.
Exhaustion.	Lungs.	....	Epithelioma.	Drs. Satterthwaite and Stimson.
....	....	....	Epithelioma.	....
....	....	....	Epithelioma.	Drs. Satterthwaite and Porter.
....	....	....	Epithelioma.	Dr. Satterthwaite.
Exhaustion and hæmorrhage.	Inguinal glands.	No.	Epithelioma.	Dr. Satterthwaite.
....	....	....	Epithelioma.	Dr. Satterthwaite.
....	....	....	Epithelioma.	Dr. Satterthwaite.
Abscess of lung.	Same place.	No.	Epithelioma.	Dr. Satterthwaite.
....	....	....	Epithelioma.	Dr. Satterthwaite.
....	....	....	Melanotic epithelioma.	Drs. Bull and Satterthwaite.
....	....	....	Epithelioma.	Dr. Satterthwaite.
Exhaustion.	....	Pachy-meningitis.	Epithelioma.	Drs. Shaw and Satterthwaite.
Exhaustion.	Same spot.	No.	Epithelioma.	Dr. Satterthwaite.
....	....	....	Epithelioma.	Drs. Satterthwaite and Porter.
Exhaustion.	Same spot.	No.	Epithelioma.	Dr. Satterthwaite.
....	....	....	Epithelioma.	Drs. Satterthwaite and Peabody.
....	....	....	Epithelioma.	Dr. Satterthwaite.
....	....	....	Epithelioma.	Drs. Satterthwaite and Peabody.
Consumption.	Same place.	Phthisis.	Epithelioma.	Dr. Satterthwaite.
Exhaustion.	....	....	Epithelioma.	Dr. Satterthwaite.
....	....	....	Epithelioma.	Dr. Satterthwaite.
....	....	....	Epithelial wart.	Dr. Satterthwaite.
Exhaustion.	Same spot.	No.	Epithelioma.	Dr. Satterthwaite.
....	....	....	Epithelioma.	Dr. Satterthwaite.
Exhaustion.	....	Gangrene of the lung.	Epithelioma.	Drs. Satterthwaite and Porter.

* The clinical history was that of epithelioma.

INTERNAL SCIRRHOUS CARCINOMA.

No. of Case.	Initials.	Age.	Sex.	Birthplace.	Condition.	Occupation.	Date when the growth was first noticed.	Locality.	Assigned cause.	Family history of cancer or not.	Kind of pain.	Name and locality of enlarged lymphatic glands.	When first noticed to be enlarged.
1	J. B.	54	M.	Ireland.	Married.	Coachman.	May, '72.	Stomach.	None.	None.	Slight.	None.	....
2	J. G.	57	M.	England.	Not stated.	Clerk.	Aug., '77.	Stomach, liver.	None.	None.	Acute.	None.	....
3	W. W.	36	M.	Ireland.	Married.	Laborer.	Feb., '78.	Stomach, liver.	Strain.	None.	Slight.	Mesenteric.	Autopsy.
4	W.B.C.	64	M.	England.	Married.	Nurse.	May, '77.	Stomach.	None.	None.	Severe.	None.	....
5	A. G. C.	50	F.	Norway.	Widow.	Laundress.	April, '73.	Colon.	None.	None.	Intense.	Mesenteric.	Autopsy.
6	H. S.	58	M.	U. States.	Single.	Farmer.	Autopsy.	Stomach.	None.	None.	None.	None.	....
7	W. A.	41	M.	Germany.	Widower.	Baker.	Jan., '76.	Stomach.	None.	None.	Sharp.	None.	....
8	A. D.	49	F.	Virginia.	Married.	Housewife.	March, '76.	Ileocæcal valve	None.	None.	Severe.	Mesenteric.	Autopsy.
9	C. M.	44	M.	Germany.	Not stated.	Butcher.	Oct., '77.	Stomach.	None.	None.	Cramps.	None.	....
10	J. L. B.	70	M.	U. States.	Married.	Not stated.	Feb., '73.	Duodenum.	None.	None.	Severe.	None.	....
11	K. G.	55	F.	Sweden.	Widow.	Milliner.	July, '75.	Stomach.	None.	None.	Severe.	None.	....
12	W. S.	53	M.	U. States.	Widower.	Laborer.	July, '74.	Œsophagus.	None.	None.	None.	None.	....
13	J. C. F.	52	M.	New York.	Married.	Stonecutter.	Dec., '74.	Bladder.	None.	None.	Intense.	Retro-periton'l	Autopsy.

MEDULLARY CARCINOMA.

No. of Case.	Initials.	Age.	Sex.	Birthplace.	Condition.	Occupation.	Date when the growth was first noticed.	Locality.	Assigned cause.	Family history of cancer or not.	Kind of pain.	Name and locality of enlarged lymphatic glands.	When first noticed to be enlarged.
1	A.M.R.	55	F.	Not stated.	Widow.	Nurse.	Dec., '73.	Left breast.	None.	None.	Severe.	None.	....
2	S. W.	83	M.	New York.	Single.	Retir'd merch't	Autopsy.	Kidney.	Renal calc'li	None.	None.	None.	....
3	M. J. T.	47	F.	Bermuda.	Single.	Not stated.	May, '69.	Left breast.	None.	None.	Severe.	Not stated.	....
4	L. S. M.	25	F.	U. States.	Married.	Not stated.	Dec., '74.	Vagina.	Abortion.	None.	Burning.	Not stated.	....

COLLOID CARCINOMA.

No. of Case.	Initials.	Age.	Sex.	Birthplace.	Condition.	Occupation.	Date when the growth was first noticed.	Locality.	Assigned cause.	Family history of cancer or not.	Kind of pain.	Name and locality of enlarged lymphatic glands.	When first noticed to be enlarged.
1	A. S.	41	F.	Not stated.	Married.	Not stated.	Dec., '72.	Rt. breast.	Not stated.	None.	None.	None.	....
2	J. H.	50	M.	Ireland.	Married.	Porter.	May, '65.	Rectum.	Op'ation for fist'la in ano.	Yes.	Slight.	None.	....

CAULIFLOWER GROWTH.

No. of Case.	Initials.	Age.	Sex.	Birthplace.	Condition.	Occupation.	Date when the growth was first noticed.	Locality.	Assigned cause.	Family history of cancer or not.	Kind of pain.	Name and locality of enlarged lymphatic glands.	When first noticed to be enlarged.
1	J. W.	33	F.	U. States.	Married.	School-teacher.	Nov., '73.	Os uteri.	None.	None.	Sharp.	None.	....
2	C. E. H.	48	F.	U. States.	Single.	School-teacher.	July, '73.	Os uteri.	None.	None.	Acute.	None.	....

UNCLASSIFIED CARCINOMA.

No. of Case.	Initials.	Age.	Sex.	Birthplace.	Condition.	Occupation.	Date when the growth was first noticed.	Locality.	Assigned cause.	Family history of cancer or not.	Kind of pain.	Name and locality of enlarged lymphatic glands.	When first noticed to be enlarged.
1	J. B.	51	M.	England.	Not stated.	Miner.	Nov., '73.	Rectum.	Hæm'rhoid.	No; but of phthisis	None.	Not stated.	....

No. of Case.	Date of operation.	Condition of general health previous to symptoms of cancer.	Was pain relieved by the operation?	Was the growth more rapid when it recurred?	Date of recurrence.	Interval between period when first noticed and first removal.	Number of recurrences.	Number of operations.	Extent of operation.	Interval between first removal and death (months).
1	....	Good.	....	....	....	....	....	....	....	....
2	....	Good.	....	....	....	....	....	....	....	....
3	....	Good.	....	....	....	....	....	....	....	....
4	....	Good.	....	....	....	....	....	....	....	....
5	....	Good.	....	....	....	....	....	....	....	....
6	....	Good.	....	....	....	....	....	....	....	....
7	....	Good.	....	....	....	....	....	....	....	....
8	....	Good.	....	....	....	....	....	....	....	....
9	....	Good.	....	....	....	....	....	....	....	....
10	....	Good.	....	....	....	....	....	....	....	....
11	....	Good.	....	....	....	....	....	....	....	....
12	....	Good.	....	....	....	....	....	....	....	....
13	....	Good.	....	....	....	....	....	....	....	....
				MEDULLARY CARCINOMA.						
1	Mar., '74.	Good.	Yes.	Has not returned.	....	3 mos.	None.	One.	Amputation of the breast.	....
2	....	Good.	....	....	....	....	....	....	....	....
3	Jan., '74.	Good.	Not stated.	Not stated.	....	56 mos.	None.	One.	Amputation of the breast.	....
4	No op.	Good up to Feb., '74.	....	....	....	....	....	....	....	....
				COLLOID CARCINOMA.						
1	Mar., '73.	Good.	None to relieve.	....	....	3 mos.	None.	One.	Amputation of the breast.	....
2	May, '78.	Poor.	Not stated.	....	....	156 mos.	None.	One.	Extirpat'n of the rectum.	4 days.
				CAULIFLOWER GROWTH.						
1	April, '74.	Good.	Yes, partially.	Yes.	May, '74.	5 mos.	One.	One.	Removal of a small piece.	28
2	Mar., April, Sept., '76.	Good.	Partially.	Yes.	Not stated.	46 mos.	Three.	Three.	Excisions of small portions.	20
				UNCLASSIFIED CARCINOMA.						
1	May, '76.	Not very g'd.	Not stated.	Yes.	Not stated.	6 mos.	One.	Two.	Extirpation of the rectum.	4

INTERNAL SCIRRHOUS CARCINOMA.

No. of Case.	Duration of the non-fatal cases (months).	Period of time from inception of disease to death or last acc'ts (months).	Date of death.	Cause of death.	Did the patient have any disease independent of carcinoma accelerating death?	Name of examiner.
1	....	6	Nov., '72.	Exhaustion.	....	Dr. T. E. Satterthwaite.
2	....	1	Sept., '77.	Exhaustion.	....	Dr. T. E. Satterthwaite.
3	....	6	Aug., '78.	Exhaustion.	....	Drs. T. E. Satterthwaite and W. H. Porter.
4	....	11	April, '78.	Exhaustion.	....	Dr. T. E. Satterthwaite.
5	....	3	July, '73.	Exhaustion.	....	Dr. T. E. Satterthwaite.
6	....	None.	Oct., '77.	Exhaustion.	Gangrene of hand and chronic dif. nephritis.	Drs. T. E. Satterthwaite and W. H. Porter.
7	....	5	June, '76.	Exhaustion.	....	Dr. T. E. Satterthwaite.
8	....	18	Sept., '77.	Exhaustion.	....	Dr. T. E. Satterthwaite.
9	....	1	Nov., '77.	Exhaustion.	....	Dr. T. E. Satterthwaite.
10	....	3	June, '78.	Exhaustion.	....	Dr. T. E. Satterthwaite.
11	....	22	May, '77.	Exhaustion.	....	Dr. T. E. Satterthwaite.
12	....	3	Oct., '74.	Exhaustion.	....	Dr. T. E. Satterthwaite.
13	....	12	Dec., '75.	Exhaustion.	....	Dr. T. E. Satterthwaite.

MEDULLARY CARCINOMA.

No. of Case.	Duration of the non-fatal cases (months).	Period of time from inception of disease to death or last acc'ts (months).	Date of death.	Cause of death.	Did the patient have any disease independent of carcinoma accelerating death?	Name of examiner.
1	61	61	....	....	....	Dr. Satterthwaite.
2	....	....	Mar., '78.	....	....	Dr. Satterthwaite.
3	56	56	....	....	....	Dr. Satterthwaite.
4	....	20	Oct., '75.	....	....	Dr. Satterthwaite.

COLLOID CARCINOMA.

No. of Case.	Duration of the non-fatal cases (months).	Period of time from inception of disease to death or last acc'ts (months).	Date of death.	Cause of death.	Did the patient have any disease independent of carcinoma accelerating death?	Name of examiner.
1	73	73	....	....	....	Dr. Satterthwaite.
2	....	156	June, '78.	Exhaustion.	Pyæmia and chronic nephritis.	Drs. Satterthwaite and Peabody.

CAULIFLOWER GROWTH.

No. of Case.	Duration of the non-fatal cases (months).	Period of time from inception of disease to death or last acc'ts (months).	Date of death.	Cause of death.	Did the patient have any disease independent of carcinoma accelerating death?	Name of examiner.
1	....	38	Mar., '76.	Exhaustion.	....	Dr. Satterthwaite.
2	....	64	Nov., '77.	Exhaustion.	....	Dr. Satterthwaite.

UNCLASSIFIED CARCINOMA.

No. of Case.	Duration of the non-fatal cases (months).	Period of time from inception of disease to death or last acc'ts (months).	Date of death.	Cause of death.	Did the patient have any disease independent of carcinoma accelerating death?	Name of examiner.
1	....	10	Sept., '76.	Exhaustion.	....	Dr. Satterthwaite.

STATISTICS OF SCIRRHOUS CARCINOMA.

1. *Age.*—It has been found that, in the largest number of cases which were accessible to the knife, the disease commenced between the ages of 42 and 46. The least age at which it made its appearance was 28 years, and the most advanced 76, above which period there seems to have been immunity. In the class affecting internal organs not accessible to the knife, it will be seen that the largest number of cases occurred between the years of 50 and 58, extending over the period from 26 to 70, with 51.77 as the average age of commencement.

Mr. Paget does not make the distinction between external and internal growths here laid down, but he states ("Surgical Pathology," p. 636) that the greatest tendency to scirrhous carcinoma (breast) occurs between 45 and 50. He, however, does not give the exact ages of his youngest and oldest cases.

The youngest recorded age at which scirrhus appears to have been noticed is given by Dr. S. W. Gross ("North American Medico-Chirurgical Review," May, 1857). He there relates the case of a mulatto child, three months old, who had a small deposit in the liver.

Winiwarter* says, in speaking of scirrhus, that the skin shows the earliest development, then the breast, and lastly the mucous membranes. The greatest period of frequency in breast carcinomas is reached between 41 and 45; after 85 they do not appear. Mucous membrane carcinomas begin between the ages of 25 and 30, reach their greatest height between 56 and 60, and do not occur after 85. He does not give the exact ages of his youngest and oldest cases.

Mr. Sibley deduced from the Middlesex Hospital Records† that, on average, epithelial cancer destroys life in fifty-three (53) months, while scirrhus lasts but 32·25 months.

2. *Sex.*—Of the external cases of scirrhus, in 36 or 87·80 per cent. the disease occurred in females; in 12·20 per cent. in males; showing that the form which is accessible to the knife is most frequently found in females, and this is owing to the

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* "Statistik der Carcinome," etc.

† "Medico-Chirurgical Transactions," vol. xliii., p. 125.

frequency with which the disease locates itself in the femal breast. On the other hand, the contrary holds good wit those growths which we have here classed as internal, 10 76·92 per cent. being in males, and 23·08 per cent. in female Of the 33 breast cases, 32 or 96·97 per cent. occurred females; 1 or 3·03 per cent. in males. These statistics agre remarkably with those of Mr. Paget ("Surgical Pathology, p. 634), who says: "Probably in every 100 cases of scirrho cancer of the breast, 98 occur in women, and I believe it chiefly this that makes cancer, on the whole, more freque in women than in men, for in nearly every other organ com mon to both sexes the greatest frequency is found in men."

3. *Conditions.*—Of the 41 cases above mentioned 31 75·61 per cent. were or had been married, while 7 or 17·07 cent. were single. In 3 or 7·32 per cent. no information obtained upon the point. Of the 13 internal cases 10 or 76 per cent. were or had been married, 1 or 7·69 per cent. single, and of 2 or 15·38 per cent. nothing was known on th point. Of course, in the absence of trustworthy statistics to the relative numbers of married and unmarried persons the community, figures have no meaning. The same sta ment would apply if we were to take the breast cases in wom en and attempted to determine whether married life tend to develop them. But even if we had the figures for one cality, they would not apply, because the cases came fro widely different points in this and adjoining States. Suc statistics, therefore, are valueless.

4. *Locality.*—Of the 41 cases above mentioned, in 15 36·59 per cent. the disease first appeared in the right brea while in 11 or 26·83 per cent. it was in the left; in 5 12·19 per cent. it occurred in one of the two breasts, th particular one not stated; in 2 or 4·88 per cent. in the nip ple. Thus, of all the scirrhous cases 33 or 80·4 per cent occurred in the mammary gland or its immediate vicinity in 2 or 4·8 + per cent., it originated in the uterus; while in th remaining 6 or 14·63 + per cent. it took its origin at variou parts of the body, as about Steno's duct, the nose, neck, rec tum, back, and superior maxilla (1 case each). Of the 13 inter nal cases 6 or 46·15 per cent. originated in the stomach; 2

15·38 per cent. in the liver and stomach; in the other 5 or 38·41 per cent. in various internal organs, as the œsophagus, duodenum, ileocæcal valve, colon, and bladder (1 case each).

The order of frequency in locality was therefore found to be as follows in the 54 cases.

Breast, including nipple	33
Stomach	6
Liver and stomach	2
Uterus	2
Cheek	1
Nose	1
Neck	1
Superior maxilla	1
Œsophagus	1
Back	1
Duodenum	1
Ileocæcal valve	1
Colon	1
Rectum	1
Bladder	1
	54

5. *Assigned Cause, especially in reference to Traumatism.*—Of the 41, in 17 or 41·46 per cent. there was no assigned cause, that is, no reason was given on inquiry; while in 15 or 36·59 per cent. one was definitely given. In 13 or 31·70 per cent. such traumatisms were mentioned as a decided blow, a mammary abscess, ulceration of the nipple, and decayed teeth. In 8 or 19·51 per cent. no answers were given to inquiries on this point. In one case the matter was uncertain (2·44 per cent.). In only 1 of the 13 internal cases was there any cause given whatever. This was a strain in a case of cancer of stomach and liver. Of the 33 cases of scirrhous carcinoma of the breast, in 13 or 39·39 per cent. there was an assigned cause of traumatic nature, such as a blow, mammary abscess, or ulcerated nipple, a proportion considerably in excess of Mr. Paget's figures, which show an ascribed injury in 17·5 per cent.

6. *Family History.*—Of the 41 external cases, in 26 or 63·41 per cent. there was no family history of carcinoma; in 6 or 14·63 per cent. this relation was distinctly shown; in 2

or 4·88 per cent. there was a family history both of carcinoma and phthisis; in 2 or 4·88 per cent. no statement was obtained in reference to previous history; in 1 or 2·44 per cent. there was a family history of phthisis alone; in 1 or 2·44 per cent. there was a history both of phthisis and syphilis; in 1 or 2·44 per cent. the history of carcinoma was uncertain, as a relative died of a uterine tumor; in 1 or 2·44 per cent. it was quite probable that there was a family history of carcinoma. Including, therefore, all the possible cases, we have 29·27 per cent. with a family history of carcinoma, against 70·73 per cent. with no family history of carcinoma. In reference to the internal growths, all were free from family taint. Adding, therefore, all forms of scirrhus together, in 54 cases there were 10 (18·52 per cent.) in which a family tendency was probable.

Mr. Paget says "in 88 patients, including four cases from other organs than the breast, that in 16 or 18·18 per cent. there was a family history of carcinoma, but the proportion is larger if calculated from a large number of private patients."

7. *Pain.*—Of the 41 cases accessible to operative interference, in 29 or 70·73 per cent. there was a decided history of pain (severe in character); in 7 or 17·07 per cent. the pain was moderate in severity; in 3 or 7·32 per cent. there was no pain; in 2 or 4·88 per cent. no statement was made on the point. Of the 13 internal cases, in 9 or 69·23 per cent. there was decided pain; in 2 or 15·38 per cent. it was very slight; and in 2 or 15·38 per cent. there was no pain. In the 33 cases originating in the breast, pain was a decided symptom in 28 or 84·85 per cent.

8. *Enlargement of the Lymphatic Glands.*—Of the 41 cases, in 22 or 53·66 per cent. the lymphatic glands were noticed to be enlarged; in 19 or 48·79 per cent. no information was gained on this point. Of the 13 internal cases in only 4 or 30·77 per cent. was it positively stated at the necropsy that the lymphatic glands were enlarged; in the other 9 or 69·23 per cent. there was either no enlargement of the surrounding glands, or else no note was made of the fact.

9. *Treatment prior to any Operation.*—Of the 41 cases,

in 12 or 29·27 per cent. there was no treatment adopted prior to operation; in 12 or 29·27 per cent. there was treatment; in 17 or 41·46 per cent. no information could be gained on this point. Of the 33 cases involving the breast, in 9 or 27·27 per cent. there had been local or constitutional treatment prior to the operation, and the results seemed to have been on the whole a failure, so that the patients willingly submitted to an operation. The treatment consisted of local anodynes, rubbing and applications of a quack ointment, internal use of arsenic, application of leeches, electrolysis, pastes (arsenical, and others the ingredients of which were unknown), incisions, and poultices.

10. *General Health previous to Inception of Carcinoma.*—Of the 41 cases, in 30 or 73·17 per cent. the general health had always been good; in 3 or 7·32 per cent. there had been syphilis; in 3 or 7·32 per cent. no information was obtained on this point; in 3 or 7·32 per cent. the previous health had been poor, the particular difficulty being headache and chronic diffuse nephritis (one case each); in 1 or 2·44 per cent. it was fair, in 1 or 2·44 per cent. the patient had suffered from general debility for 8 years. Of the 13 cases, in all, or 100 per cent., the general health had been good. Of the 33 cases involving the breast, in 27 or 81·82 per cent. the health had been good in all but one case; and from the fact that a cachexia was only shown in three, it may be inferred that scirrhous carcinoma is a disease of established health rather than the contrary, facts which support the theory of some writers that cancer is an affection of "robust" health.

11. *Effect of Operation on Pain.*—Of the 41 cases, in 26 or 63·41 per cent. there was decided relief from pain following the operation, although in a few of them the interval of freedom was short; in 6 or 14·63 per cent. pain was partially relieved; in 8 or 19·51 per cent. the history was incomplete; in 1 or 2·44 per cent. pain was not relieved. Of the 33 breast cases, the pain was relieved in 24 or 72·73 per cent.

These are important points in connection with others which will be shown subsequently, when the question is discussed whether the operation tends to increase the expectation of life. Even if we should not find that life is prolonged, as operations are now carried out under the influence of anæsthetics and with the diminished immediate danger to life which modern surgery has assured, we may in very many cases promise the patient that the operation will be painless and that the wound will be healed within a week or ten days. During this time and until the subsequent eruption of the disease, there will be almost certainly an absence of pain. Patients thus are relieved from the manifestations of a loathsome disease, that makes them offensive to themselves and to others, and they are granted an immunity from pain for months and even years, during which time they may travel, visit their friends, and have time to calmly prepare for the almost inevitable—a fatal issue.

12. *Rate of Growth after Removal.*—Of the 41 cases, in or 41·46 per cent. the progress was more rapid; in 19 46·34 per cent. no information could be gained, as the histories were incomplete; in 3 or 7·32 per cent. it was not rapid; in 1 or 2·44 per cent. it was difficult to tell; in 1 2·44 per cent., although it was positively stated that the disease returned, no mention was made of the rapidity.

Mr. Paget ("Surgical Pathology," page 652) thinks "the recurrent local disease appears generally to be less intense than the primary." Owing to the absence of any information in about half the cases, no conclusions can be reached. Probably statements from patients on this head would not be much value.

13. *Average Period (in months) between First Appearance and Operation.*—As there was no cutting operation in one case, and the dates were not given in two, there remained only complete records; the average interval was 17·03 months, excluding the case with longest interval, which was 214 months. The shortest interval from inception to operation was three weeks (figured as one month). The average gives us a fair opportunity of looking into the questions of the advantage disadvantage of early operation on the life expectation. The solution of it will be taken up later.

14. *Dangers of the Operation.*—Of the 41 cases, extirpation by the knife was performed, and the mortality directly attributable to operation was only 5 per cent

two cases, one died of hæmorrhage, and the other on the table.

15. *Average Interval between First Removal and Death.*—Including these two cases with another (case No. XXIV.) that died of uræmia, we have 18 fatal cases that lived in the aggregate 305 months, or an average of 16·95 per cent. months. In 31 cases tabulated by Mr. Paget ("Surgical Pathology," page 654), it was 22·74, or 22¾ months. These cases should really be excluded because the cause of death in the two was accidental, and in the third from an independent disease. With this modification the interval would be 20·33 months—not quite as good a showing as Mr. Paget has.

16. *Average Duration of the Non-fatal Cases.*—Of the remainder, 16 were living January 1, 1879, and had lived a period of 572 months, or an average of 35·75 months. As the cases were concluded in many instances shortly after the operation, this percentage will in reality be much larger. Now, adding these two aggregate sums together, viz., the sum of months lived by the fatal, to those lived by the non-fatal, we have 305 + 572 = 877 months lived by all cases, excluding two incomplete cases, one of electrolysis, three that died shortly after the operation, and one of unnatural length—an average, therefore, of life 877 ÷ 34 = 25·79 *under operation.* These are the least possible figures under our table, but they will of course be very much increased as time goes on, and would now be increased by the addition of the excluded cases, especially one of Dr. Weir's, very remarkably prolonged. Paget gives the duration of cases where there has been operative interference as 48–55 months.

As we have no means of comparing the results of operative interference with non-interference, the question of the advantage of the former can not be settled. Mr. Paget's figures are of course built upon the clinical, not microscopic, evidence of scirrhus, and we can not compare them with ours.

It is interesting to observe, first, that the person who has lived longest (256 months), and is still in pretty good health, has been operated on four times; then in the next longest case, also living (85 months), the operation has been done twice; in the next, also living (69 months), there have been four operations, commencing in 1877 (Dr. Sabine's case); that in the next longest case (65 months) there was one operation. The case of electrolysis lived in all 46 months. The knife appears, therefore, to have enjoyed the preference; but, as before said, we have no means of comparing the results of interference with non-interference, because we have no statistics, and never shall have any until we have been able to collect them from *post-mortem* records, showing the ages to which such persons live when left alone. We shall probably have to wait some time for these records. It may be said of the knife that it is preferred by patients because it operates rapidly and painlessly, there is rapid convalescence, and the mortality is minimal. *The fact remains positive that where the greatest number of operations have been performed we have found the greatest duration of life.*

17. *Does Early Operation give a Longer Respite of Life than Late Operation?*—In order to solve this question we arranged all the fatal cases of interference by the knife in groups, viz.: 1. Those in which the operation was done within the first six months after the inception of the disease: 2. Those in which it was done within the second six months: 3. Those in which it was done within the third six months.

These cases were found, however, to present such a small percentage of those operated on that no trustworthy conclusions could be deduced from them.

18. *Average Duration of the Symptoms of Internal Scirrhus.*—The average duration of the symptoms of the 13 cases of internal growths of scirrhus were only about 7 months (16.23 per cent.), and in one case there were no symptoms at all.

19. *Are the Clinical Symptoms sufficient to make a Positive Diagnosis before Removal?*—In the majority of cases, the surgeon makes no mistake, because he usually has to deal with scirrhus of the breast; in the diagnosis of internal cancer, the variety is rarely detected, and indeed the disease itself is not suspected unless it interferes with some of the important functions of life.

20. *Has the Microscopic Study of the Disease enabled us to determine better its Real Nature from the Clinical Symptoms?*—In only a single instance is it known that an error has been committed in assigning a growth to its particular class in the form now under consideration. In this the specimen had become so changed by decomposition (in warm weather) that its character was mistaken, and the diagnosis of fibroma given. The error was subsequently discovered and corrected.

21. *Has the Recurring Tumor the same Type as the Primary?*—In reference to scirrhus, it may be said that it never undergoes any change if it returns at the same site. Scirrhus of the breast is, however, apt to be medullary, when it invades such organs as the lungs, liver, or kidney.

22. *When the Operation was Extensive, was the Disease more retarded than when less Tissue was removed?*—In reference to this point it is difficult to obtain any satisfactory information. Presumably most cases were extensive, because surgeons of the present day are impressed with the fact that much success depends upon the thoroughness with which they remove the growth.

23. *Does Carcinoma ever occur Primarily in the Glands?*—In one instance only did the disease occur primarily in the glands (axillary). The possibility of this occurrence, so rare as to have been denied by excellent observers, seems to be reasonably well shown in this case.

24. *Relation of the Disease to Phthisis and Syphilis.*—In the 54 cases of scirrhus, including those in both tables, in only 5 (Nos. IV., XI., XIII., XIX., XXIV.), or 9.26 per cent., has any family history of phthisis been obtained, and in no case is phthisis mentioned as having preceded the outbreak of the disease. In 5 cases (Nos. VII., XX., XXII., XXIII., and XXXVII.) there was some complication of the respiratory organs that hastened death, but in only 3 was it stated with positiveness, and even in them there was room for doubt, because a *post-mortem* examination appears to have been made in only 2 cases. Adding, however, these 3 cases to the 5 in which there was a family history of phthisis, and all of which are distinct cases, it would appear that in only 8 out of 54

cases (14·81 per cent.) was there any phthisis connected in any way with the person or his family.

STATISTICS OF EPITHELIOMA.

Of the 37 cases of epithelial carcinoma, all but one occurred when they were within reach of operative interference.

1. *Age.*—The largest number of these cases of epithelial carcinoma were observed first between the ages of 58 and 6, the average age at which it occurred being 54·11 months, with a range from 27 to 72 years. Mr. Paget says that the favoring period regularly increases with the advance of age, until 70 is reached. Winiwarter says, "Carcinomas of the skin begin the earliest. The greatest frequency of the skin carcinoma is reached between 46 and 50. There is no cancer after 35."

2. *Sex.*—Of the 37 cases, 28 or 75·68 per cent. occurred in males, 9 or 24·32 per cent. in females; it will be observed that these figures are the reverse of those presented in the scirrhous variety. Mr. Paget, speaking of epithelioma, says: "In 105 cases affecting parts common to both sexes, 86 were in men (81·90 per cent.), and 19 (18·09 per cent.) in women.

3. *Condition.*—Of the 37 cases, 28 or 75·68 per cent. were married or had been, while 4 or 10·81 per cent. were single; in the balance, 5 or 13·51 per cent., the histories were incomplete on this point. The influence of marriage can not be determined in epithelioma any more than in scirrhus, for similar reasons. Winiwarter's also concludes that its influence is not certain.

4. *Locality.*—Of the 37 cases, in 11 or 29·73 per cent. the growth was located on the lip, either on the upper or lower alone, or both, or at the angle of the mouth; in 4 or 10·81 per cent. the growth was located on the tongue (above or below); in 3 or 8·11 per cent. on the glans penis; in 8 or 21·62 per cent. on the nose, cheek, ear (external and internal, 1 each), and labia (2 cases each); in 11 or 29·73 per cent. the disease was located in the floor of the mouth, eyelid, edge of the hair, palate, rectum, larynx, neck, face, inferior maxilla, œsophagus, and cornea (1 case each). Of Winiwarter's 5 cases, 39·41 per cent. were located in the skin.

5. *Assigned Cause, Traumatic or Constitutional.*—Of the 37 cases, in 12 or 32·43 per cent. it was ascribed to smoking

a pipe, for in all the cases but one, the patient had been in the habit of resting the pipe stem at the point where the disease first made its appearance. In 8 or 21·62 per cent. various traumatic causes were ascribed, such as chewing a tooth-pick, etc., so that in 20 or 54·05 a previous traumatism was assigned. In 13 or 35·14 per cent. no cause whatever was given to it, while in 4 or 10·81 per cent. the history did not state anything in regard to this point. Mr. Paget, in his 34 cases of epithelial cancer, states that in 19 or 55·88 per cent. there had been an injury or previous morbid condition in the affected part. Winiwarter gives as causes: 1. Slight frostings of the face as in people exposed in the country. 2. Slight and frequent injuries, such as cuts and scratches in shaving; excoriations of the lip by a pipe stem; and burning by nicotine, nitrate of silver, etc. 3. From lacerated or incised wounds; injuries to a cicatrix. 4. From a blow of which no apparent trace was left. Permanent pressure, such as precedes bed sores or callus. 6. Some pathological process such erysipelas, frostbite, opaline plaques. 7. Hypertrophy of papillary growths, warts, etc., or from cysts or burns. 8. From acute inflammation leaving a chronic infiltration. 9. From ulcerations of the skin.

6. *Family History.*—Of the 37 cases, in 26 or 70·27 per cent. there was no family history of carcinoma; in 5 or 13·51 per cent. there was a distinct family history of cancer; in 6 or 16·22 per cent. the facts were deficient; in 1 or 2·70 per cent. there was no history of carcinoma but one of phthisis. In only 5 per cent. of Mr. Paget's epithelial carcinomas was there a possible family history of carcinoma. Of these cases (16) 3 only were epithelial (p. 735).

7. *Pain.*—Of the 37 cases, in 15 or 40·54 per cent. there was very severe pain; in 7 or 18·92 per cent. there was a moderate amount or slight pain; in 10 or 27·03 per cent. there was absolutely no pain; in 5 or 13·51 per cent., no information could be obtained on this point. Pain seems to be a very prominent symptom in this class of growth; and when it attacks the tongue the suffering is more intense than in the other localities. Mr. Richard Barwell ("Lancet," April 19, 1879) suggests, for the relief of this pain, division of the

gustatory nerve, which he has done when the whole orga was involved, though he has never done it when a portion only of the tongue was involved.

8. *Enlargement of Lymphatic Glands.*—Of the 37 cases in 18 or 48·65 per cent. there was no affection of the lymphatic glands; in 5 or 13·51 per cent. the lymphatic gland were found to be enlarged; in 14 or 37·84 per cent. no information could be gained on this point. Mr. Paget says th out of 42 cases in the ordinary course of hospital and priva practice, including many in the early as well as in the lat stages of the disease, he observed the lymphatic glands enlarg 20 times or in 47·62 per cent. These figures have no gre value, because it is well known that sooner or later the ne plasm will invade the lymphatic glands in the vicinity. Sho none exist in the vicinity, the disease may progress to gre length or even to a fatal issue with no involvement of glan

9. *Treatment prior to Operation.*—Of the 37 cases, in ma there had been local treatment before operation, the appli tions generally made being a saturated solution of the tercl ride of antimony, which, in almost all cases, produced temp rily relief, and in fact seemed to cause the disease to disapp Some had taken arsenic internally.

10. *General Health previous to Carcinoma.*—Of the 3 cases, in 28 or 75·68 per cent. the previous health of the pa tient prior to the inception of the disease had always be good; in 2 or 5·41 per cent. it was not known; in 1 or 2·7 per cent. it had always been poor; in 1 or 2·70 per cent. th patient had suffered from dyspepsia for a number of years; i 1 or 2·70 per cent. the patient was suffering from hemiplegia; in 1 or 2·70 per cent. he had the habit of eating opium, a also had hæmorrhoids and stricture of the urethra; 1 or 2·7 per cent. was addicted to the excessive use of alcohol; in or 5·40 per cent. there had been syphilis. Mr. Paget says "The general health of patients with epithelial cancer is u ally good, till it is affected by the consequences of the loc disease" (p. 741).

11. *Effect of Operation on Pain.*—In 29 of the 37 ca es in which a cutting operation was resorted to, in 16 or 57·7 per cent. the pain was relieved by the operation; in 2 or 6·9

per cent. the pain was partially relieved; in 2 or 6·90 per cent. the pain was not relieved; in 1 or 3·45 per cent. there was no pain to be relieved; in 8 or 27·59 per cent. no information could be gained regarding relief from pain; and, in two of the cases in which no cutting operation was resorted to, relief from pain was brought about by the application of the terchloride of antimony. It would appear from the above figures that the operation should be resorted to for the relief of pain; and in this class of growth some relief seems to have here gained by the use of a local caustic, which is the reverse of the results in scirrhous carcinoma.

12. *Rate of Growth after Removal.*—Of the 29 cases in which the cutting operation was resorted to, in 13 or 44.83 per cent. the recurring neoplasm grew more rapidly than the primary; in 2 or 6·90 per cent. there has up to date been no return of the growth; in 14 or 48·27 per cent. no information could be gained as to the return of the growth. Mr. Paget speaks of some cases extending over a large number of years, but these cases are rare. The rate of progress after removal is different in different parts of the body. In the tongue it is most malignant; in the scrotum and extremities least so.

13. *Average Period in Months between First Appearance and Operation.*—Of the 37 cases, in 26 cases the average interval between inception and operation was 20·92 months; the shortest interval being 3 months, the longest 156 months. In one case (XVII.) the patient stated that he had the disease 40 years. In this case the disease was probably a benign wart for a number of years.

14. *Average Interval between First Removal and Death.*—Of the 10 fatal cases in the table, the average interval between removal and death was 5 months; the shortest interval being 1, and the longest 9 months. This paragraph must be studied in connection with Nos. 15 and 16.

15. *Average Duration of the Non-fatal Cases.*—In the 18 non-fatal cases, the average duration was over 54 months; the shortest interval being 8 and the longest 178 months, which as yet do not come up to some extraordinary cases cited. The case of over 40 years' standing is excluded from the calculation, but may be found in the tables. When the full history of

each case is concluded, there is still a possibility that the duration of the disease may have equaled in some instances the remarkable ones now on record.

16. *Average Duration of Fatal Cases.*—In the 15 fatal cases the average duration in 13 was 29·23 months; the shortest being 5 and the longest 154 months, and this is much below Mr. Paget's conclusions. "The average duration among 14 patients, in whom it commenced below 45 years of age, was 39 months; that among 17 in whom it commenced later was 45½ months." In the 7 fatal cases in our table which occurred before 45 years of age, the average duration of life was only 14$\frac{3}{7}$ months; while in the cases after 45 it was 39 months.

17. *Average Duration of Fatal and Non-fatal Cases to Date, January, 1879.*—The average duration of the fatal cases and of the non-fatal to date (January, 1879) is, of the 31 cases of which we have complete records, 44.03 months. While the average duration is comparatively less for all the cases together, if we separate those below 45 from those above it, it will be found that in the former the average was only 28·70, while above 45 it was 51·33 months. This average will of course constantly improve until all the cases are dead.

18. *Does the History of the Fatal Cases operated on show that they live on an average longer than Similar Cases not operated on?*—This is impossible to decide from our statistics; for, in all of the 37 cases but 7, an extensive cutting operation was done. Of these latter four had imperfect histories. In 1 a partial operation was done, and in the remaining 2 none was attempted.

19. *Has any Relation been shown between Sarcoma and Carcinoma in these Cases?*—An important deduction may be drawn from the microscopical examinations found annexed to the cases. In no case was sarcoma seen to undergo conversion into a carcinoma or be in any way associated with it. The converse was also true. As truly as the carcinoma is an epithelial production, and the sarcoma allied to the connective substance group, and as truly as these normal tissues keep asunder from one another in health, so also do they in disease. Carcinoma is almost always associated with inflammatory deposits within the area of its extension, and takes its origin

from preëxisting epithelial elements, so that they may be found incorporated in it, as for example in the breast, where it may sometimes be seen that there is a gradual change from the secreting tubular gland tissue to the solid branching cylinders of which scirrhus is made. How far we have a right to call such growth adeno-carcinoma is doubtful, because we do not know whether the gland tissue is a new or old formation. The essential difference between inflammatory deposit and sarcoma needs to be more thoroughly insisted on.

20. *Relation between the Variety of Carcinoma and the Site.*—Some important clinical facts may be derived from these statistics, confirming previous ideas. The site determines the kind of disease. Given cancer of the breast, and it will almost certainly be scirrhus. Given cancer of the lip, and it will almost certainly be epithelioma. Given cancer of the eyelid, and it will almost certainly be rodent ulcer—of the liver, it will almost certainly be encephaloid.

The cases of colloid, encephaloid, and cauliflower growths are too few to serve as a basis for comparison. As given in full in the register of cases, and in the tabular form, they exhibit the chief points of interest. No general conclusions are given which apply to all cases of cancer, and there is no advantage in thus classifying them together. Their clinical characters are as different as the microscopical, and each group should be studied separately.

Art. II.—*A Plea for Cold Climates in the Treatment of Pulmonary Consumption. Minnesota as a Health Resort.*

By Talbot Jones, M. D., of St. Paul, Minn.

There is perhaps no subject which has received a larger share of attention from the medical profession, scientists, and sanitarians, or concerning which more has been written, than the one of climatology, with special reference to its effects upon consumption. The importance of the subject, even now but too little appreciated by the medical profession, is deserving of all the diligent research and intelligent investigation which has been bestowed upon it. Indeed, it is scarcely an exaggeration to say that a more important subject never enlisted the attention of scientific men, for, of all the diseases which affect mankind, tuberculous consumption is the most important, and, excluding epidemics, causes the greatest proportion of deaths.

The Registrar-general of England and Wales gives about twelve out of every hundred deaths to consumption, as the mean rate through a series of years.

Dr. Schnepp's ("Archives de Médecine," 1865) statistics show that of the population of England, Russia, Germany, and France, aggregating 230,000,000, the annual deaths from this disease are 869,000. Of the people inhabiting the globe, numbering 968,000,000, 3,000,000 each year die of this disease. But it is not necessary to go very deep in statistics to prove that consumption is a fearfully prevalent disease; there can be no difference of opinion on that point. Accepting this, then, as true, it will be the labor of this paper to show that, of all the resources at our command in warding off this malady where a predisposition to it exists, or in combating it when once established, dependence alone can be placed on climate. But, before proceeding to speak of climates in general, or that best adapted to each individual case, it will perhaps be not unprofitable to briefly allude to the anatomical change which takes place in the lung-tissue of those laboring under phthisis. Formerly the doctrine of Laennec's, that "phthisis always depended upon tubercle," was accepted as a fact by the profession at large, and, under the influence of his great name, finally became a dogma, which continued to obtain support and belief, leading naturally to the second error, following almost as a corollary to the first, "that phthisis and tuberculosis were identical."

This neoplasm, or tubercle, was supposed to be developed in the lung-tissue, and undergo numerous but obscure changes. Others maintain that all the varied phenomena which take place in the lung-tissue may be explained under the one process—inflammation. Niemeyer has made the announcement that oftentimes in the lungs of those dead of consumption not a single tubercle is to be found. This writer declares that many of the lesions which are generally attributed to t [illegible] cle, and which the followers of Laennec and Louis Sill consider due to this agency, are really consequences of a chronic pneumonia, the primary changes having their seat in the bronchi and the cavities of the alveoli, and the process characterized by an enormous proliferation of cell elements. This variety is chiefly epithelial or cellular, and may be called catarrhal phthisis.

Virchow substantially agrees with Niemeyer. "The latter divides pulmonary consumption into two groups, one depending upon miliary tubercle, the other the result of chronic pneumonia. It is not only a certain kind of pneumonia which may cause phthisis, but every simple inflammation of the lungs may result in it. While it is chronic catarrhal pneumonia which most frequently leads to caseous deposit and consequent ulceration of the lungs (and this is the most frequent form of consumption), the acute catarrhal and croupous forms also frequently end in phthisis.

The phthisis resulting from miliary tuberculosis is, therefore, according to Niemeyer, the only form not depending upon inflammation for "its origin." Ordinary bronchial catarrh often gives rise to the yellow tuberculous deposit. There is still another variety of consumption in which there is a proliferation of connective-tissue elements, occurring primarily in the alveoli and bronchial connective-tissue, which may be termed fibrous phthisis. Here normal lung-substance is replaced by this alveolar tissue, and is analogous to the morbid process seen in the inter-lobular spaces of those dead of cirrhosis of the liver, or of those who have locomotor ataxia or sclerosis of the brain—all of these morbid conditions being due to one and the same agency, to wit, connective-tissue hyperplasia. "The processes of inflammation, as we now study them, are so numerous and varied that they include all the changes that are found in the lungs of those who die of any form of phthisis. While one class of these changes may be produced by inflammatory changes in the cell elements of the lung tissue, another class may be due to an inflammation which may result in the production of serum, fibrin, and pus. Necrotic and reparative inflammatory processes may give rise to another set of changes in the lungs, and a hyperplastic or tubercular inflammation may cause the development of those nodular masses concerning which recently there has been so much discussion." (Professor Loomis's address before the American Medical Association, 1878.) When we come to examine into the comparative merits of climate with reference to the influence it exerts for good, or as a curative agent, we are at the outset almost bewildered at the diversity of opinion which is entertained as to just what constitutes a good climate.

The great importance of climatic treatment in appropriate cases of consumption has been recognized and insisted upon since medicine had its birth as a science. Hippocrates had very clear ideas as to the efficacy of climate in the disorder.

Aretæus recommended long sea-voyages, just as Bennet does to-day; while Celsus spoke of the benefit to be derived from camping in the pine forests, as does Professor Loomis now. However widely the profession may differ concerning the etiology and morbid anatomy of consumption, there is a singular unanimity of opinion among authorities that, in order to arrest the progress of the disease already commenced, or diminish to a maximum the probability of its development in those threatened, most reliance must be placed in the climatic treatment. The acrimonious contests which have been waged among pathologists for more than half a hundred years, with regard to the pathological changes which take place in the lungs of phthisical subjects, have not correspondingly obscured the advantages likely to result to the invalid by a change of situation; but, having concentrated attention upon the whole subject, it has rather been the means of uniting all schools in a common belief that in climate alone can reliance be placed as a curative agent. Upon this common ground, then, the disciples of Laennec and Louis, on the one hand, and those of Virchow, Niemeyer, and Waldenburg, on the other, can and do stand to-day, each maintaining that where phthisis has not reached the so-called second stage, or stage of ulceration and excavation, a change of climate, intelligently made, together with the proper adjuvants, will cure the disease definitely in an indefinite number of cases. "Of all the means hitherto recommended for the cure of phthisis, none have been followed more frequently by complete cessation of the disease than change of situation" (Laennec on the Chest). "The most important means in the treatment of phthisis, indeed the sovereign remedy, as compared with all others, is climate. If it is taken advantage of early enough, and not, as unhappily is too often the case, when it is already too late, we may expect the best results from it. I have often observed, and every physician as well as myself must have observed, the most cures of chronic phthisis from climatic influence; it is true many are but temporarily benefited, but sometimes there are perfect cures" (Waldenburg). These two quotations from eminent authorities, representing different schools of thought, will suffice to show the high estimation which is placed upon climate as a therapeutic agent. Quotations to the same effect from authors equally learned and distinguished could be multiplied, but the same truth would be only elaborated thereby.

When we remember how lamentably therapeutics has failed us in this disease, it is no surprise that the profession should at last come to place most reliance on climatic treatment. Remedies almost without number have from time to time been presented, and greatly lauded, only to be abandoned "after being tested by that great regulator—clinical experience." That we possess no remedy acting as a specific in this disease was never more apparent to the medical profession than it is to-day. All honorable practitioners must admit this. The remedies possessing real, decided value can be counted upon the fingers of one hand. When, therefore, we see how little dependence there is to be placed on mere therapeutic agents in combating consumption, and when it has been shown how much real benefit not unfrequently follows climatic treatment, the importance of insisting upon a change of situation when it can be made, and of making no mistake in the selection of the proper climate, is a vital matter. One had much better make no change at all than to select a climate at hap-hazard, and without reference to just the climate which his particular case demands. Therefore, while authorities are agreed with regard to the advisability, nay, the necessity, of a change of climate in order to the successful treatment of phthisis, the reisgreat difference of opinion as to just what constitutes a climate from which the best results will be secured. Some recommend a visit to mountainous resorts, others long sea voyages, many warm, moist climates, while not a few insist upon cold and dry climates as meeting all the indications in the treatment of consumption. When we begin to inquire into the character and comparative merits of climates, we are at once struck with the fallacy of the doctrine, which has obtained for generations, that the disease is more frequent in cold than in warm latitudes. Just the reverse of this is true. From an extensive series of data, it has lately been shown that the further we progress north the greater immunity the inhabitants enjoy from consumption. It is well known that "far up in the north, where the Ice King is," consumption is either extremely rare or altogether unknown. In the bleakest, coldest, and most exposed portions of the globe, where winter exists well-nigh continuously, and where sudden and severe changes of the atmosphere hold to a maximum, consumption is very infrequent. Indeed, so true is this that we are forced to the conclusion that extreme cold is inimical to the production of consumption.

Professor Flint quotes Dr. Hjaltelin, who resides in Iceland, as declaring that phthisis is unknown on that island. Finmark, northern Greenland, north Sweden and Norway are likewise almost exempt from a disease which carries off one tenth of the population of the tropics. The mortuary reports of St. Petersburg and Moscow, Russia, show a mortality from phthisis much less than that of either Constantinople or Rome, both of which places are favorite sanitaria for pulmonary invalids. Stockholm, in a cold climate, although never spoken of as a health resort, shows an annual death-rate from consumption only half as great as that of either Venice, Florence, or Pisa, which are in a warm climate, and which have been heretofore greatly lauded as health resorts. Thorowgood, in his work on the "Climatic Treatment of Consumption," says that the mortality from consumption in London is 277 in 100,000; while in Norway it is but 100 in 100,000. Northern Scotland shows fewer deaths from this isease than southern England, and London mortuary reports ompare very unfavorably with those of Edinburgh.

“The inhabitants of cold climates are not particularly iable to be affected by the external forms of tuberculous disase” (Mr. Phillips on Scrofula). Colonel Tulloch, in his reort to the British War Office, shows that the soldiers sent to old and dry countries are less frequently affected by scrofula han those stationed in hot countries. In Nova Scotia and ew Brunswick, where the winter temperature is very low, he disease is less frequent than in Jamaica and at Sierra eone (see Fisk Fund Prize Essay). The mortality of Monreal, Canada, to-day is less than that of Havana; and that f St. Paul less than that of Jacksonville, Fla. Quebec is nuch less scourged by the disease than is New Orleans, Moile, or Galveston. Dr. Forry, who has written exhaustivey on the subject of consumption as it affects the American rmy, is authority for the statement that the proportion of oldiers annually attacked by consumption amounts to 10⅞ per ,000 in the entire country, while in the northern regions, here the climate is most severe, the proportion of phthisical atients is not more than 5 per 1,000.

Dr. Bennet (“On the Treatment of Pulmonary Conumption by Hygiene, Climate, and Medicine,” London, 866), although advocating a warm climate as the one best dapted to the needs of consumptives, admits that the statisies of the French army clearly indicate that soldiers suffering rom phthisis get much worse in warm climates; and a reiewer of this work, in the “American Journal of the Medial Sciences,” October, 1868, says, “it is well known that he extreme heat of our own (American) summers proves extremely fatal to those in the third stage of phthisis.” Brompton Hospital in England is devoted exclusively to the treatment of consumption. To test the value of a warm climate in the treatment of this disease upon a large number of patients, the authorities of that institution, in 1865, sent twentysix well-marked cases to winter in Madeira, which is one of the most popular and celebrated sanitaria. The report published on the return of these patients showed that two out of the twenty-six returned improved; seven were slightly improved; twelve were no better and no worse; five were made worse, and one died (Thorowgood).

"Fifteen years ago the belief prevailed that the essential climatic element for the arrest and cure of phthisis was a warm, dry atmosphere. More recent observations and investigations have settled the fact that phthisis is not necessarily hastened in its development by a low (cold) temperature, and is not prevented or cured by a higher temperature" (Loomis before the American Medical Association, 1878). While, therefore, the immunity which cold countries enjoy from phthisis is clearly indicated, attested alike by a large series of data and a vast clinical experience, observation equally exact, and from authority fully as high, tends to establish the truth that the favorite habitat of consumption is included within the isothermal lines of 30° and 40° mean annual temperature. While no zone is absolutely free from the disease, it is the temperate and torrid ones where the death rate holds to a maximum. In the climatic treatment of phthisis it has heretofore been the custom, and, it must be acknowledged, is still only too frequently the habit, to send patients applying to us for advice indiscriminately to Nassau, Havana, Jacksonville, or New Orleans, without the slightest regard to the needs and requirements of each individual case. It was only necessary to detect weak lungs, or suspect the early development of consumption, or discover crude tubercle, before we gave the stereotyped and peremptory order to leave at once for Cuba, Florida, or San Antonio in Texas. It has been shown by Fuller that on the coasts of Spain, Italy, and France, bordering on the Mediterranean Sea, and in Madeira and Malta, which together constitute the most popular sanitaria in Europe for consumptives, the ratio of mortality to the natives from this disease exceeds that of England. The well-known high mortality from the disease in England, taken in connection with the fact that these favorite southern health resorts exhibit even a greater ratio of deaths, indicates very clearly that the popular belief that Southern Europe, and especially Italy and the coasts of France, is almost exempt from consumption is untrue, and therefore mischievous. If there is anything, with reference to climate, which is definitely settled, it is the fact that phthisis is vastly more common in warm, tropical countries than in cold latitudes. Consumption is relatively as common in our own southern health resorts as it is in the corresponding warm countries in Europe. Florida, which has been so vaunted as a sanitarium for invalids, shows a greater ratio of mortality from phthisis to-day than Minnesota. Dr. Pollock (London "Lancet") says, "in the West India Islands the disease is met with in its most severe and rapid forms."

"A French writer in the 'Gazette Médicale' states that at Rio de Janeiro the number of consumptive patients in the hospital is nearly as great as in Paris. The Professor of Medicine in that city considered that a sixth part of the mortality among the poorer classes in Brazil was owing to this cause" (Lee). The rational and legitimate deductions to be drawn from the foregoing facts are that cold climates are inimical to the development of consumption, while the mortality the world over holds to a maximum in warm latitudes. The question now arises, if all this be true, why is it that medical men, both in this country and in Europe, have, up to within the last ten or fifteen years, almost invariably advised their patients to seek warm countries as a means of relief to their pulmonary troubles?

When we consider the high rate of mortality in humid southern climates, not only to patients sojourning there in quest of health, but to the natives who have always resided there; and, on the other hand, when we know the favorable results which, as a rule, attend the sending of patients to cold latitudes, as well as the low rate of mortality to the natives from consumption in these locations, the question is a difficult one to answer. Although practically not so important, the question why warm climates should exhibit such a large death rate from phthisis is still an interesting one. Take for example Cuba, or, indeed, any of the West India Islands or Florida. The latter is perhaps to-day more frequented by pulmonary invalids than any of our southern places of resort. The exceeding fatality of consumption to families who for generations have resided in that State, as well as the unfavorable effects, as a rule, observed upon patients who visit that State in declining health, is well known. We are not surprised that such is the case after having carefully analyzed the climate, for really there is little that can be said in its favor, and a great deal which must be said against it. "Two causes predominate over all others—deficiency of muscular exercise and humidity give rise to most chronic disorders. These causes act principally upon the skin; they tend incessantly to repel within the torrent of the circulation superfluous or excrementitious elements which should be eliminated from the economy; they produce alterations of the blood and cachectic states of the system, of which the origin is unknown" (Edwards). The effects of a hot and humid atmosphere upon the skin is either to entirely suppress cutaneous transpiration, or reduce it to a minimum. We have the highest authority for the statement that the suppression of this insensible perspiration, from whatever cause, is not only immediately harmful and dangerous, but is very likely to even give rise to the tuberculous cachexy. The importance of the skin as a supplementary organ to the lungs, in ridding the economy of effete matters, is universally acknowledged. "In hot and damp weather the cutaneous perspiration is performed with difficulty, a feeling of languor and depression, which makes the heat appear stifling and renders all exertion insupportable" (Foissac, "De la Météorologie"). This indisposition to exertion, either physical or mental, due in part to humidity, suppression of the insensible perspiration, and to heat, is a serious drawback to a patient's improvement. A certain amount of exercise in the open air is the *sine qua non* to the successful treatment of a patient with phthisis. Florida would be unfit for a patient to visit, for this reason if for no other. Here everything invites to repose, an irresistible feeling of languor seizes a person, one's energies are paralyzed, and exercise consequently neglected. "There is a sensation of fullness in the head, and it has the effect of diminishing the nervous energies, and of inducing nervous congestion of the internal organs." As a natural result of this lack of muscular exertion and neglect of exercise, there follows great relaxation of both the nervous and muscular systems—effects so disastrous that even the warmth of climate and change of scene, with the fresh hope these inspire, can not counterpoise them. The ideal climate is still undiscovered; and, while we must admit this, it does not lessen the value of certain features of climate which have been discovered and shown to possess decided advantage in the treatment of consumption. Out of a vast accumulation of facts with regard to climate, from exhaustive analysis of the influence on phthisis of humidity, altitude, temperature, soil, ozone, direction and velocity of the wind, elevation above the sea, voyages upon the sea, atmospheric pressure, etc., these are some facts upon which the profession are agreed. Altitude will first be noticed. Careful investigation of this matter made by competent and trustworthy men, both in this country and in Europe, clearly indicates the importance of altitude in the climatic treatment of consumption.

Fuchs, from a large series of data, shows that the greatest mortality in Europe from this disease is in those cities and towns situated upon the sea-coast. The same truth obtains among countries as well as cities which have but small elevation above the sea. This, by most writers, is supposed to stand in a causative relation to the high rate of mortality observed in England, the lowlands of Holland, and that portion of Germany bordering on the sea. Mortuary reports of the cities of this country, situated upon the sea-coast, in whatever latitude, show a maximum death rate from consumption. This high mortality decreases with elevation up to a certain point, depending upon latitude—the nearer we approach the equator the greater must be the altitude. The following quotation from Thorowgood will suffice to show the influence which altitude exerts. "At Marseilles, on the seaboard, the mortality from consumption is 25 per cent.; Hamburg, 48 feet above the sea, 23 per cent.; while at Eschvege, 496 feet, it is only 12 per cent., and at Brotterode, 1,800 feet above the sea, it is but 0·9 per cent." When the favorable influence which altitude exerted upon consumption became apparent to the profession, for a time sea voyages were nearly abandoned, and hitherto favorite resorts near the sea-coast deserted. The tide turned toward the mountains. Invalids who had heretofore relied upon the favorable effects of long sea voyages, now placed all their hopes in resorts from 2,500 to 8,000 feet above the sea—the greater the altitude (they supposed) the better. A more lamentable mistake could scarcely have been made. In avoiding Scylla they ran into Charybdis. The result of breathing this rarefied air, to persons unaccustomed to it, produced very distressing effects. In many it gives rise to hæmorrhage from the lungs. It throws suddenly increased labor upon the lungs and heart. Distressing effects are manifested in divers ways, and these extreme altitudes, after a fair trial, had to be abandoned for situations less elevated. Later investigation seems to indicate that the comparative infrequency of phthisis among inhabitants residing in elevated regions is due, not so much to mere altitude, as to the absence of organic matter in the atmosphere of these high elevations.

"It is now established beyond all doubt that organic substances, whether gaseous products of putrefactive processes, or microscopic germs floating in the atmosphere, when they reach the bronchial tubes in the inspired air, are capable of exerting morbid processes which lead to serious results. It has been demonstrated that these organic substances are more numerous in the lower than in the higher strata of the atmosphere, and that they continue to diminish the higher we ascend, until a certain height is reached in the mountain ascent, when they entirely disappear" (Loomis). These deleterious organic substances, which are constantly inhaled in the lower strata of the atmosphere, are one of the strongest arguments against sending patients to Florida, the West Indies, New Orleans, and other cities on our Atlantic and Gulf coasts. In these situations, the altitude being small (the mean of Florida being but 57 feet above the sea, and that of New Orleans even less), the effects upon the organism must be most pernicious. The favorable effects of the inhalation of ozone, to consumptives, is well known, and the absence of this form of active oxygen in situations with but slight elevation above the sea should discourage physicians from sending their patients to such resorts. There is much more ozone in the higher than in the lower strata of the atmosphere. That ozone is exceedingly valuable in the climatic treatment of phthisis is clearly indicated. The manner in which it operates on the organism is best explained by Dr. Schreider in his work on Climatology.

Ozone possesses high oxidizing power and purifies the atmosphere by chemically uniting with the products of decomposition. It destroys organisms by combining with them. "It also promotes nutrition and blood changes by supplying to the respiratory organs a most active form of oxygen. Therefore, when choosing a health resort for phthisical invalids, we should give the preference to a locality in which there is constantly an excess of ozone in the air, for experience has established the fact that there the climate is especially salubrious." The air of the country contains more ozone than that of cities in the same latitude; and that of the sea and mountains is richer in this variety of oxygen than the atmosphere of the plains. It is now generally conceded that a humid atmosphere is, as a rule to which there are but few exceptions, hurtful to consumptives. Dampness, however, is of different kinds. The atmosphere may derive an excess of moisture either from contact with the ocean, from excessive rainfall, or from the evaporation which takes place from the surface of impervious soils and in low situations. This latter kind is by far the most dangerous. Indeed I am free to say that, in my opinion, this peculiar dampness arising from badly drained soil as a developing cause of consumption is second in importance to no condition, whether atmospheric or terrestrial. We are indebted chiefly to the labors of Bowditch of America and Buchanan of England for the elucidation of this important fact. They have fairly shown that dampness arising from low, badly drained, or clay soil is a very influential factor in the production of consumption.

Laennec has stated somewhere in his writings that he knew of a certain locality where this dampness was so constant that two thirds of the inhabitants died of phthisis. The application is plain—those localities only should be recommended where the soil is sandy or highly pervious to water, and where rainfall is rapidly absorbed, from the porosity of the soil, or else carried off by streams. The important subject of temperature has been adverted to. The primary effect of a cold climate is an increased demand for oxygen; tissue changes take place more rapidly, together with the products of increased tissue metamorphosis. To meet this increased demand on the economy, more food is taken, the digestive power and appetite are increased, and all the processes which govern organic nutrition are improved. The processes of absorption, secretion, sanguification, assimilation, respiration, and circulation are carried on much more actively than in warm climates. Cold, whether it be water or climate, is well known to be a powerful tonic. That increased oxidation of the tissues takes place in a cold climate is shown by the increased carbonic acid which is thrown off from the lungs. The most robust health is maintained where constructive and destructive metamorphosis of tissue is most actively carried on, and it is the fair balance of this process of destruction and reparation which constitutes the phenomena of life. "Under exposure to cold, oxygen being abundantly absorbed, the effete products of the blood are first consumed, so purifying that important fluid, and rendering it more fitted to nourish the body; next, by its consuming action on the tissues, oxygen promotes the cycle of changes just described, food is taken and assimilated, and thus destruction and construction of the tissues rapidly go on, so creating great physical vigor. Thus it is that cold climates are invigorating" (Ringer). The effects of heat on the system are very much the opposite of those of cold. Heat is relaxing and enervating. Oxidation of the tissues is greatly lessened when the body is in an atmosphere warmer than itself.

The harmful effects of a warm, moist climate on the action of the skin has been referred to.

It is my belief that a serious misapprehension obtains among authorities with regard to the supposed injury which results to phthisical patients from variations of the atmosphere. It is a popular belief that, the nearer we approach to absolute uniformity of temperature, the nearer we approach to the ideal climate. To my mind a more fallacious idea never gained popular credence; a more pernicious one the professional man has rarely been called upon to correct. If this can be substantiated, cold climates should by all means be avoided; and the physician who has heretofore advised patients to seek a cold, bracing, tonic atmosphere, where changes in the atmosphere the world over hold to a maximum, has either displayed ignorance of just what constitutes an atmosphere favorable to the successful treatment of consumption, or else has been trifling with human life. But I apprehend that our friends are in error. If from fear of unfavorable effects from this variation in temperature we advised patients against seeking cold latitudes, we should be guilty of a grievous wrong, for such advice would probably influence them against visiting locations where, as we have seen, such patients are most benefited. If variation in the temperature of the atmosphere is so terrible in its effects as many would have us believe, the question at once arises why is pulmonary consumption not more common in cold latitudes where, as it has been shown, variability is the rule, and uniformity the exception? again, if a mild, uniform, equable temperature is inimical to the development of phthisis, why is the disease so frequent in Florida, the West Indies, and other localities where the climate is remarkably uniform and where sudden changes in the atmosphere hold to a minimum?

After investigating the subject thoroughly one can not avoid the conclusion that this matter has been greatly exaggerated, and that undue importance has been given to a particular feature of climate which there are no data to show is as harmful as is generally supposed.

After a careful study of the foregoing facts, and by way of summing up, we believe that we are justified in drawing the following deductions:

1. No zone enjoys entire immunity from pulmonary consumption.

2. The popular belief that phthisis is common in cold climates is fallacious.

3. The idea, now so prevalent, that phthisis is rare in warm climates is as untrue as it is dangerous.

4. The disease causes a larger proportion of deaths on the seashore—the mortality diminishing with elevation up to a certain point.

5. Altitude is inimical to the development of consumption, owing, chiefly, to the greater purity of the atmosphere in elevated situations, its freedom from organic matter, and its richness in ozone.

6. Moisture arising from a clay soil or due to evaporation is one of the most influential factors in its production.

7. Dampness of the atmosphere, from whatever cause and in any altitude, predisposes to the development of the disease, and is hurtful to those already attacked.

8. Dryness is a quality of the atmosphere of decided value.

9. The most unfavorable climate possible for consumptives is one of uniform high temperature and a high dew point (warm and moist).

10. That the effects due to change in the atmosphere are by no means so pernicious as are generally supposed, and that upon this subject present views require modification.

While the foregoing propositions are, in my judgment, true as a rule, many of the statements are not without exception. For example, while as a rule altitude is favorable in the treatment of phthisis, Dr. Loomis says that his patients have almost uniformly got worse by a stay at the Catskill Mountains, N. Y.; and Walsh is authority for the statement that Madrid in Spain, which is situated 2,000 feet above the sea, shows a high rate of mortality from the same cause. Again, while a cold, bracing climate is generally favorable to persons of the tuberculous cachexy, and to those having the disease in its first stages, yet it is well known that there are persons, met with occasionally, who are extremely sensitive to cold, and greatly depressed by it. And so there are those who find a warm, moist climate best adapted to their needs; but this must be very exceptional, and rather a curiosity of clinical experience. After thus having endeavored to give a brief *résumé* of those features of climate which are at the present time regarded by our best authorities as favorable and unfavorable in the treatment of phthisis, the subject of the influence exerted upon consumptives by the climate of Minnesota in particular will next be referred to. A few words, first, with regard to the geography of Minnesota—its altitude, geology, the character and configuration of its soil, and other physical aspects. The surface of Minnesota is generally undulating. It consists chiefly of rolling plains or prairie, which have an elevation varying from 1,200 to 1,900 feet above the sea. Little need be said with regard to the soil of the State. Professor N. H. Winchell, of the University of Minnesota, who has given the subject careful and intelligent study, says, by way of summary: "Hence, we may denominate the soils of Minnesota, except in the small area in the southwestern part of the State, the limits of which have not yet been accurately ascertained, as *drift soils*. The terms 'limestone soil' and 'sandstone soil' are almost inapplicable to our State. . . ." A large portion of the State has a soil which is a light, sandy loam. The highlands of Minnesota constitute the water-shed of this continent. There are three rivers in the State whose sources are but a few miles apart, the waters of which, pursuing different directions, empty, one into the Arctic Ocean, one into the Atlantic, while a third mingles its waters with those of the Gulf of Mexico. In the "Medical Statistics of the Provost-General's Bureau, 1875," published under authority of the War Department, the mean altitude of twenty-two of our Northern and Western States are given as follows:

	Feet.		Feet.		Feet.
Minnesota	1,100	Delaware	100	Rhode Island	125
West Virginia	1,050	New York	800	Ohio	700
Iowa	900	Missouri	800	Pennsylvania	700
Wisconsin	850	Michigan	800	Indiana	675
Vermont	600	Illinois	625	New Hampshire	625
Maine	375	Kentucky	600	Massachusetts	400
New Jersey	200	Maryland	375	Connecticut	300

District of Columbia, 125.

From this table it will be seen that, of all the States east of the Rocky Mountains, Minnesota has the greatest altitude. As might be expected this varies in different portions of the State. The highest elevation is about 2,000 feet above the sea. Lake Itaska, which is the source of the Mississippi river, has an altitude of 1,530 feet. The following meteorological report for 1868 is published by the War Department. It will give the information which is most desirable in a study of the climate of Minnesota. For fuller and more comprehensive tables bearing upon the same subject, the reader is referred to the "Report of the Chief Signal Officer." It is but right and proper to say that the winter of 1868 was an unusually mild one for this State, and persons making estimates of the climate should remember that a mean average through a series of years would indicate several degrees lower temperature than is shown in these tables:

METEOROLOGICAL SUMMARY.

United States Signal Service Observations for 1878—St. Paul Station. (*By permission of War Department.*)

DATE.	BAROMETER.									
	MEAN OF—							RANGE.		
	Local observations.	TELEGRAPHIC OBSERVATIONS.						Highest.	Lowest.	Difference.
		Corrected for temperature, instrumental error and elevation.			Corrected for temperature and instrumental error only.					
		A. M.	P. M.	Midnight.	A. M.	P. M.	Midnight.			
1878.										
Jan...	30·003	30·015	29·990	30·007	29·133	29·122	29·132	30·563	29·533	1·03
Feb..	29·905	29·924	29·880	29·910	29·063	29·039	29·057	30·482	29·348	1·13
Mar..	29·888	29·870	29·793	29·846	29·030	28·982	29·018	30·262	29·328	0·93
April.	29·651	29·684	29·609	29·655	28·866	28·818	28·849	30·032	28·737	1.29
May..	29·823	29·853	29·778	29·832	29·038	28·984	29·022	30·190	29·401	0.78
June.	29·818	29·882	29·777	29·820	29·050	29·002	29·029	30·141	29·374	0·76
July..	27·875	29·905	29·842	29·887	29·115	29·074	27·084	30·140	29·571	0.56
Aug..	29·811	29·845	29·782	29·810	29·053	29·019	29·027	30·133	29·563	0·57
Sept..	29·905	29·937	29·865	29·907	29·121	29·078	29·102	30·430	29·260	1·17
Oct...	29·854	29·863	29·819	29·867	29·030	29.007	29·039	30·512	29·189	1·32
Nov..	29·977	29·998	29·937	29·990	29·139	29·110	29·144	20·395	29·467	0·92
Dec...	30·052	30·069	30·045	30·077	29·177	29·171	29·191	30·496	29·365	1·13
Sums.	358·513	358·840	358·117	358·608	348·815	348·406	348·694	363·776	352·236	11·54
Ann'l means	29·876	29·903	29·843	27·884	29·068	29·034	29·058	30·315	29·353	0·96

United States Signal Service Observations for 1878—St. Paul Station. (*By permission of War Department.*)—Continued.

DATE.	THERMOMETER.							Mean relative humidity. (Local observations.) (Per cent.)
	MEAN OF—				RANGE.			
	Local observations.	TELEGRAPHIC OBSERVATIONS.			Maximum.	Minimum.	Difference.	
		A. M.	P. M.	Midnight.				
1878.								
January	22·5	19·0	25·7	22·7	37	−13	50	79·7
February	31·6	27·0	36·9	31·1	55	3	52	72·8
March	44·4	37:5	51·9	43·4	64	21	43	62·8
April	51·1	44·4	58·6	49·8	76	30	46	58·1
May	55·1	49·2	62·0	53·5	79	33	46	56·7
June....................	66·6	60·7	74·3	64·8	87	48	39	69·0
July	73·7	68·5	80·5	72·2	96	57	39	72·1
August	72·0	65·2	80·4	70·1	94	52	42	69·1
September.............	60·6	53·6	69·0	59·0	94	36	58	67·4
October................	46·3	40·8	51·9	44·2	72	15	57	62·1
November.......... . .	38·3	32·3	45·4	36·7	64	15	49	66·1
December..............	19·8	15·7	23·6	18·2	44	−13	57	73·2
Sums..................	581·5	513·9	660·2	565·7	86·2	28·4	57·8	822·8
Annual means..........	48·5	42·8	55·0	47·1	71·8	23·7	48·1	67·7

United States Signal Service Observations for 1878—*St. Paul Station.* (*By permission of War Department.*)—Continued.

DATE.	WIND.							Amount of rain or melted snow. (Inches and hundredths.)	Number of days on which rain or snow fell.	Number of auroras.
	Prevailing direction.	NUMBER OF MILES.					Maximum velocity during month.			
		Noon to 6 P.M.	6 P.M. to midnight.	Midnight to 6 A.M.	6 A.M. to noon.	Total.				
1878.										
January	SE.	1531	1190	1112	1460	5293	32	1·00	8	1
February	N.	1501	1119	889	1176	4685	26	0·67	6	0
March	SE.	2278	1405	1482	2024	7189	40	1·24	11	0
April	E.	2389	1784	1406	1944	7523	48	2·43	15	0
May	NW.	2252	1584	1445	2070	7351	40	2·33	18	0
June	SE.	1982	1367	1155	1732	6236	30	3·58	14	0
July	SE.	1779	1114	928	1591	5412	36	4·47	12	0
August	NW.	1651	981	1012	1343	4987	36	1·43	7	0
September	SE.	2019	1256	1287	1688	6250	55	2·18	12	0
October	NW.	2508	1799	1696	2109	8112	47	1·85	14	0
November	SE.	1693	1313	1173	1466	5645	26	0·61	4	0
December	NW.	1600	1356	1334	1496	5786	22	1.04	18	0
Sums	....	23183	16268	14919	20099	74469	..	22·78	129	1

From a study of these meteorological reports it will be observed that the mean temperature of St. Paul for 1878 was 48·5. It will also become apparent that the impression, which is held by so many persons who reside out of the State, that the climate though cold is uniformly cold, is a mistake. The difference between the maximum and minimum range of temperature is great. There is no country of which I have any knowledge, situated in the same latitude as Minnesota, and whose mean altitude is upward of 1,100 feet, which is not subject to atmospheric variations just as great as those observed in this State. Therefore when it is proposed to try the effects upon a phthisical patient of a cold, bracing climate as a therapeutic measure, the fact must be kept constantly in view that such a climate, in whatever zone, is subject to sudden atmospheric changes. So true is this that coldness and climatic variability are wellnigh synonymous terms. Elsewhere I have endeavored to refute the impression which so largely obtains that changes in the atmosphere are hurtful and dangerous. My own observation has led me to the conclusion that individuals wintering in Minnesota, if warmly clad in woolens, experience none of the pernicious effects from sudden changes in the atmosphere which not a few describe, but none here have observed. A careful inquiry among physicians residing in different portions of the State has elicited nothing but what is confirmatory of such a statement. Sudden variations in the atmosphere, exposure, etc., are supposed in the great majority of cases to stand in a causative relation to pneumonia. Accepting this as partly true, it would seem that this disease would be an exceedingly common one in Minnesota, where atmospheric changes are not only great but sudden. Investigations (*vide* "Vital Statistics," U. S., 1860) indicate that the mortality from pneumonia is twice as great in the New England and Middle States, and much greater also in the Southern States than it is in Minnesota. Copying from the "Vital Statistics" of Minnesota, the deaths from consumption by months were as follows through four years:

MONTHS.	1874.	1873.	1872.	1871.	Total for four years.
December	54	30	36	25	145
January	52	45	41	32	170
February	45	32	34	29	140
June	47	41	35	30	152
July	57	47	30	35	169
August	52	54	46	39	191

Total deaths from consumption during the winter months for four years, 455.

Total deaths from consumption during the summer months for four years, 512.

From a study of the foregoing tables, it will be observed that in the three months in the year which are coldest and subject to the greatest atmospheric variations, there were fewer deaths from the disease than in the three corresponding summer months, during which equability and uniformity of the atmosphere were the rule, and variability the exception. That sudden atmospheric changes in this State are not so hurtful to phthisical patients as is generally supposed is clearly indicated, and the indication is sustained by ample corroborative testimony. Why these weather changes do not result in more mischief to invalids is practically not an important question: it is sufficient to know that such is a fact, confirmed alike by the mortuary reports and in the experience of physicians in different portions of the State.

Whenever the claims of Minnesota as a desirable resort for consumptives is urged, we are almost invariably met with the same reply, viz., that the rigors of the winter are entirely too severe on patients; and, atmospheric variation being great and sudden, the effects must be hurtful.

I have elsewhere attempted to show that neither of these objections can be substantiated, either by an appeal to the mortuary reports of this State, or to the experience and observation of the physicians practicing here. That the thermometer frequently goes below zero in Minnesota, just as it does in New England, New York, and other States, is well known, but there are few if any now who, in the light of the late investigation, will contend that mere cold, however severe, either predisposes to phthisis or is hurtful to those already attacked. Those who candidly accept facts must admit that this climate is subject to considerable atmospheric variation. Now, if the effects of this are so pernicious to invalids as many picture them, why are the results not apparent in the mortuary reports of the State? The injurious effects upon the economy of a moist atmosphere have been alluded to. By referring to the foregoing meteorological tables it will be observed that the atmosphere of this State is remarkably free from moisture. The geographical location of Minnesota protects her from all oceanic influences. It need scarcely be repeated that this marine atmosphere is a fruitful source of mischief to consumptives, as indicated by the large death rate to those persons residing in situations where this influence is operative. The well known high rate of mortality from consumption among the inhabitants of New England, New York, New Jersey, and other States bordering on the Atlantic Ocean is due largely to this cause. It is not surprising that Florida should suffer from this scourge when we remember that it is a peninsula, and therefore exposed on two sides to this oceanic nfluence. Hygrometric measurements show that the atmosphere of that State is loaded with moisture.

Consumption may almost be termed an "indoor" disease, and lack of exercise in the open air as a developing cause is carcely less important than heredity itself. This will explain he alarming prevalence of the disease among those who lead nactive and sedentary lives. Editors, clergymen, the occuants of boarding schools, hospitals, and nunneries, become tiolated, and they fall an easy prey to consumption. It is at present conceded upon all hands that the cure of the disease depends more upon what may be termed the open-air treatment than any other, be it dietetic or therapeutic. Not a small proportion of the medical profession in this country, aware of the great importance of keeping patients in the open air as much as possible, have advised against a trip to Minnesota, through fear that patients could not be in the open air sufficiently, on account of the cold weather experienced here during the winter. This objection is well taken, and is fatal to Minnesota, or indeed any resort either home or foreign, if it can be substantiated. It is my sincere belief that invalids can be as much in the open air in this State during the 365 days of the year as they can in any State in the Union. With warm wrappings, they can be in the open air almost all the time during our winter as well as summer months. The whole number of days during our winters the extreme cold of which prevents invalids being out of doors are fewer in number than are the rainy days during a corresponding period of time in Florida, which of course prevents invalids from being out. Let an unprejudiced person carefully study the meteorological reports as published by the War Department, with reference to the bearing upon this subject, and he will, I am satisfied, be convinced that more actual time can be spent in the open air in the State of Minnesota than in Florida. There are many ways in which an invalid may pleasantly pass the time in the open air here during the winter months. Dr. Foissac, in his work on meteorology, quotes the remark of Admiral Wrangele that "Diseases are of rare occurrence in Siberia, and old persons preserve their vigor until a very advanced period. The exercise they take in the open air, whether traveling on sledges or skating on the ice, is the chief cause of their good health."

To ascertain the opinion of the profession of this State concerning the effects of climate upon phthisis, the Minnesota State Board of Health recently sent out a circular and received the following replies :

Q. I. Is tubercular consumption as liable to be developed here as in the eastern or southern portions of our country, in persons predisposed to the disease?

Forty-one answers were received. Yes, 1; no, 37; undecided, 3.

Q. II. Have you known any cases to originate in this State in persons not supposed to be predisposed to the disease?

Forty-one answers were received. Yes, 17: no, 21; undecided, 3.

Q. III. Does the climate of Minnesota favor the cure of *phthisis* pulmonalis (any form) originating elsewhere?

Forty-one answers. Yes, 39; no, 2; more than one half supplemented the answer with "in the early stages of the disease."

Q. IV. If so, to what characteristics of the climate is the favorable effect due, and in what manner is it produced?

Thirty-nine answers. "To dry and stimulating character of the atmosphere." "Tonic effects upon the whole system." "To elevation and a clear and dry atmosphere." "To dry atmosphere and ozone." "Stimulating effects of atmosphere in connection with outdoor exercise." "To light and its effects mostly." "Cold winters more favorable than mild."

Q. V. In what stage of the disease are consumptives most likely to be benefited by residence here?

Forty answers. In the incipient stage, 32. In all stages, but better in early stage, 4.

Q. VI. Is a tendency to hæmorrhage in any stage of the lisease an indication favorable or unfavorable to immigration o this State?

Forty answers. Favorable, 18; unfavorable, 6; unde- ided, 12.

Q. VII. What months are most favorable for immigra ion here?

Forty answers. Autumn, 8. Summer, 12. Spring, 5. ate spring or early fall, 10. Any month, 2. Undecided, 3.

Q. VIII. Do you know of persons now living in the State r elsewhere who came here while suffering from phthisis, ther incipient or developed, and who were cured or benefited y residence here?

Forty-one answers. Yes, 24. Many, 7. A few, 3. No Can not say, 6.

The favorable view I entertain with regard to the cli mate of Minnesota, being the opinion of but a single individual, would be entitled to but little weight, if the deductions drawn can not be established by an appeal to facts and corroborated in the experience and observation of the medical practitioners located in different portions of the State. Elsewhere attention has been directed to the meteorological and mortuary reports of the State and the bearing they have upon this subject. With regard to the replies to the circular sent out by the State Board of Health, I think they possess great value. They clearly indicate the estimation which is placed upon the climate of this State by forty of the oldest and most prominent practitioners in it, who have through a series of years had ample opportunity to watch and study climatic effects upon phthisis as it has occurred in their own practice. Dr. D. W. Hand, President of the State Board of Health, writes as follows upon this subject:

"Persons with an hereditary tendency to consumption, or with the disease already beginning, will find this climate remarkably well adapted to their wants.

"Between the pleasant rolling prairie, the wooded lake region, and the dense pine forests of the northern section of the State, they can choose what seems most agreeable and best adapted to them, while the dry, bracing atmosphere will enable them to live much of the time out of doors without fear of 'taking cold.' This comparative exemption from fear of 'colds' when exposed to the open air, day or night, is, in my opinion, one of the greatest charms of this climate."

The late distinguished Congregational divine, Rev. Horace Bushnell, D. D., of Connecticut, who spent a winter in this State for the benefit of his health, wrote concerning this climate as follows: "The winter climate is cold, and yet so dry and clear and still, for the most part, as to create no great suffering. One who is properly dressed finds the climate much more agreeable than the amphibious, half-fluid, half-sloppy, grave-like chill of the East. Real snow-storms are rare; there were none last winter. A little more snow to make better sleighing would be an improvement. As to rain in winter, it is almost unknown. There was not a drop of it last winter, from the latter part of October to the middle of March, except a slight drizzle on Thanksgiving Day. I had spent a year in Cuba without benefit. I had spent also nearly a year in California, making a gain in dry season, and a partial loss in the wet season, returning, however, sufficiently improved to resume my labors. Breaking down again from this only partial recovery, I made the experiment now of Minnesota; and, submitting myself, on returning, to a very rigid examination by a physician who did not know at all what verdict had been passed by other physicians before, he said, in accordance with their opinions, 'you have had difficulty in your right lung, but it is now healed.'"

Testimony of a similar nature could be produced from persons residing in different portions of the Union, but this would be inconsistent with the original scope of this paper.

In estimating the advantages likely to result to an invalid by a change of climate, there are many things to be taken into consideration besides the mere effects on the system of altitude, humidity, latitude, temperature, atmospheric pressure, etc. Before selecting a situation, we should have clearly in our mind the advantages a location offers for recreation, for exercise, for spending the greater portion of the time in the open air, for sport, for social enjoyment, etc. Invalids will find St. Paul, the capital of the State, a beautiful and attractive city of about 40,000 inhabitants. It is situated upon the Mississippi River at the head of navigation. It is the great commercial center of the Northwest. The city offers to the visitor superior advantages for recreation, pleasant diversion, social enjoyments, etc. There are several daily newspapers published here which would be a credit to any city, however populous. There is an able pulpit, a public library, excellent hotels, private boarding-houses, theatres, etc. The environs of the city are delightful. The picturesque scenery about St. Paul has become familiar to many persons in different portions of the Union by means of the stereoscopic views carried home by the annual stream of visitors who come to the city. During the summer months, there are daily excursions to the numerous pleasure resorts, lakes, etc., in the vicinity of the city.

The beauty and fame of these lakes, especially, have gone abroad and bring to our State annually an increased number of health and pleasure seekers. Lakes White Bear, Minnetonka, Elmo, and others in the immediate vicinity of this city, are perhaps surpassed in beauty only by Lake George in New York. They afford fine opportunities to the invalid for profitable diversion and recreation. Fine fishing, gunning, rowing, sailing, bathing, and driving, together with the pleasures which the lakes offer for social intercourse, combine to render these resorts extremely pleasant and cheerful. Many short excursions may be made from the city to places of interest in its vicinity. The renowned Falls of Minnehaha, Fort Snelling, and the Falls of St. Anthony, may be especially mentioned as pleasant places to visit. It may be thought singular that, in a paper on climatology, I should allow myself to be so much diverted as to enter into a description of St. Paul and its near-by attractions. I have no apology to offer for this. It is too much the habit of medical advisers to send patients to resorts known only by their meteorological reputations.

To my mind it is a matter of no mean importance to know what are to be the invalid's surroundings at a health or pleasure resort. That physician will be most successful in the treatment of phthisis, or indeed any disease, who does not despise small things.

Among the numerous circumstances requiring investigation are the probable effects each particular climate is likely to exert on the digestive and assimilative powers of the patient. This I consider a highly important matter. It is but charitable to assume that there are none who, in the light of late investigation, are not willing to acknowledge that the appetite is keener, digestion more actively and painlessly performed, and that the assimilation of food is carried on more perfectly in a cold than in a warm climate. In cold climates there is an increased demand for food, and an increased ability to digest it. The powers of assimilation being strengthened, there results, as a natural consequence, an evolution of muscular, nervous, and glandular force.

It is almost universally remarked that, shortly after their arrival in Minnesota, invalids notice a marked improvement in their appetite and digestion. So true is this that there are medical writers who maintain that this improvement of digestion and assimilation is a more influential factor in the successful treatment and cure of consumption, as it presents itself in this State, than all the other favorable conditions combined. It is not alone the nitrogenous foods which are so well digested, but the hydro-carbons as well. It is the latter variety which play such an important *rôle* in the constructive metamorphosis of tissue.

"The deficient digestion of animal food in phthisis is a very serious thing. It keeps the patient in such a weak state that fatal effects follow shocks that could otherwise be borne up against." "In tuberculous consumption the body wastes away, not because of the destruction of fat being increased, but because of its renewal being arrested."

"The great object in the treatment of phthisis is to get the system in such a condition that it will assimilate fat." "To find the easiest assimilated oil and to prepare the digestion for the absorption of oil are the main problems in the cure of consumption." (Chambers on "The Indigestions.") The above quotations from recognized high authority indicate clearly enough both the importance of improving the digestive viscera of the patients and of their taking animal food and oil after the improvement has been effected. There is, perhaps, no State in the Union in which the processes of digestion and assimilation are more actively performed than in Minnesota. This was commented upon in the replies received in answer to the circular sent out by the State Board of Health. To my mind, one of the most serious objections against warm climates, as a resort for consumptives, is the intense dislike which patients acquire for foods which are rich in hydro-carbons, but especially oils. So high an authority as Baron Liebig states that oily foods are disgustful to persons n hot climates. When, therefore, Dr. Chambers has shown how immensely important it is that consumptives should take oil and assimilate it, taken in connection with the declaration of Liebig that such food is disgustful to persons in warm climates, the question at once arises: Is a medical adviser ever ustified in sending invalids to warm resorts, where this pernicious influence will be most operative?

It is difficult to understand the reason why the profession in this country still persist in sending their patients to Florida. That improvement should take place in that State is against reason and experience alike. If we except a sandy soil, it does not possess a single element which is now regarded as favorable for the palliation or cure of phthisis. The climate is miserable; it is hot and damp. The altitude being low, the atmosphere has much organic matter in it. The streams are sluggish; the atmosphere in many localities filled with malaria. The State is exposed on two sides to oceanic influences. When crude tubercle has formed in the lungs, the great desideratum is to keep it from breaking down. It is well known that the lungs are oftentimes exceedingly tolerant of hardened tubercle. It may give rise to but little local or constitutional disturbance for years. But, when this mass begins to break down and undergo a process of softening and discharge, from whatever cause, the end is not far off. The great object in the treatment of consumption is not to remove the tuberculous mass already formed in the lungs, but rather to place the patient in such a condition that its further formation will be arrested, and that already existing there may be kept from breaking down and undergoing the process of discharge and suppuration. The climate of Florida, which is moist and warm, must certainly have the effect of breaking down this tuberculous matter. Heat and moisture in the form of poultices act in the same manner upon external tissues. This warm, moist climate of Florida must act as an internal poultice, softening the morbid mass, and thereby hastening the fatal end.

It should be a matter of congratulation that the medical profession of this country are beginning to study this question of climatology in an enlightened and rational way of late, and we may confidently look forward to the time when the effects of climate upon consumptives will be a thoroughly worked-out problem. A comparison of the mortality with the startling result observed upon the inhabitants of warm and cold latitudes has at last challenged the attention of the more thoughtful of our profession, and they are now seriously asking themselves whether, in the light of recent investigation, they are ever justified in sending patients with consumption to those very sections which have always shown a maximum death-rate from the disease. Professor Loomis, in his admirable address before the American Medical Association, 1878, says: "For a long time a warm, sedative climate was regarded as the suitable one for phthisical invalids; more recently it has been claimed that a cold climate is the favorable one, and that phthisical mortality decreases as we go northward."

In an able article ("American Journal of the Medical Sciences," January, 1872), Dr. Simons, of Charleston, S. C., a place by the way of no mean reputation as a Southern sanitarium for phthisical patients, admits with a frankness which does him honor the superiority of a cold over a warm climate. He says: "We are justified, therefore, in making the general statement that cold, bracing climates are the most applicable to those cases which merely present predisposition to or are in the early stages of consumption." Dr. Doble, "On the First Stage of Consumption" (London, 1867), holds substantially the same view. After entering at length into the subject, he arrives at the following conclusion: "Exercise should therefore be taken, which, as well known, stimulates the functions, increases the appetite, and promotes the circulation of the blood. The patient should be sent in the early stages to a dry and cold climate, and bathing in or sponging with cold water should be recommended." Dr. T. K. Chambers informs us that they send their phthisical patients of England to the cold, bracing air of northern Scotland. It is during the first stage of consumption (the curative stage) that invalids derive so much benefit from a visit to Minnesota. Nowhere in this paper have I desired to create the impression that, during the advanced stages of this malady, the climate of this State would be beneficial. I can not insist too strongly upon the inutility of sending phthisical patients to this State who are in the advanced stages of the disease. It is my belief that, where the stage of ulceration and excavation has been reached—and this can only be determined by means of physical diagnosis—this climate does positive harm. There are, however, numerous exceptions to this rule.

As a rule, it is only those predisposed to the disease, or

laboring under its first stages, who are likely to be benefite
or cured by the climate of Minnesota.

If physicians are determined to send their patients to
warm, instead of a cold, bracing, invigorating climate,
seems to me they should by all means select a site with co
siderable elevation above the sea, and where the atmosphe
is dry. Such a place, for example, as Aiken, S. C., whic
has an elevation of 556 feet above the sea, and the climate
which is dry—differing in this respect from the climate
Florida. There is no necessity for sending phthisical subjec
to European resorts.

We have in this country every diversity of climate, a
there is no particular climate in Europe which has not a cou
terpart in this country. The monthly variations in tempe
ture at Madeira and the Canaries are very much the same
those of Pilatka and St. Augustine in Florida. The clima
of Malaga and Algiers corresponds closely with that of San
Barbara and San Diego in California; while Mentone, whi
at present is perhaps the most vaunted and best advertis
sanitarium in Europe, has a climate which closely resembl
that of Aiken, S. C., the difference being only 4° Fahr. in
monthly mean. Denver and St. Paul have their counterp
in the mountainous resorts of Switzerland. The objection
the climate of Colorado is that the altitude of that State
too high; and that there is a fine sand in the atmosphe
caught up and transported by the stiff breezes experienced
the high table-lands of this State, and that these foreign s
stances, coming in contact with the delicate mucous me
brane of the bronchial tubes, cause great irritation to t
lungs, which are already sore and weakened from diseas
processes.

The late distinguished Professor Lewis Rogers, of Lou
ville, Ky., who, during the winter of 1873, visited Califor
with a view of determining from personal observation the
fluence of the climate of that State upon consumptives, sa
("American Practitioner," May, 1874): "To my surpris
did not find a single resident physician at all enthusiastic
his praises of Southern California. I asked them if they w
in the habit of sending their patients there, and they repl

hat they did so occasionally, and for a brief period, in the
inter, but they preferred for most of their cases the high
nd cool resorts of the Sierra Nevada Mountains." Further
long, in speaking of San Diego and Santa Barbara, two of
e most popular resorts in that State for invalids, he says:
The proximity to the sea renders the air salt and somewhat
imid, unless the wind blow from inland, and in the winter
ason cold fogs are somewhat troublesome for a portion of
e day. From what I could learn, they are deficient in
riety and abundance of the best kinds of food. The gen-
al supply of some of the most essential articles is brought
om a distance." Professor Loomis is of the opinion that
mping in pine forests is one of our most valuable means in
mbating consumption. The turpentine exhaled from pine
es, it is well known, converts ordinary oxygen into ozone,
d it has been shown that this is definitely valuable as a
nedy in phthisis. The immense pine forests of Minnesota
ll afford the invalid ample opportunity to test the value of
ofessor Loomis's suggestion. I must confess to being some-
at skeptical with regard to the improvement which follows
camping out in the pineries; still, it may be tried.

In closing this paper I can not do better than give the con-
sions at which Dr. Franklin Staples, of this State, arrived
his "Report on the Influence of Climate on Pulmonary
eases in Minnesota," read before the American Medical
ociation in 1876. He says: "Among the conclusions to
ich we think our investigation has led are the following:
Owing to the geographical position of Minnesota, the alti-
e and general physical condition of the surface of the coun-
the character of the soil, the temperature and comparative
ness of the atmosphere, the character of the sun's light
e, the freedom from all forms of paludal poisons, and to
er causes, the climate of the State is stimulating and favor-
in its effects upon diseases of the lungs and air-passages,
ch are dependent upon and characterized by debility, im-
ect digestion and assimilation, and the tuberculous and
mous diathesis. 2. That the beneficial effects of the cli-
e are due largely to influences exerted directly or indi-
ly upon the functions of nutrition. 3. That acute lobar

pneumonia is not to any great extent prevalent here, but th the chronic forms of pneumonic inflammation are found exist, and that the cases of phthisis pulmonalis originati here have been generally of pneumonic origin ; but that t does not conflict with the fact that phthisis contracted el where and under different climatic conditions may be be fited and cured by influences found to exist here ; and t we find facts to verify this conclusion, especially in the la number of the present inhabitants of the State now in g health, who came from other localities, as invalids suffer from evident phthisis pulmonalis, either caseous or tuber lous. 4. That, since the climate of the northwest, in comm with that of all other regions and countries, has its imper tions, its disadvantages in some classes of invalids suffer from pulmonary disease, as well as its great advantages others, an intelligent discrimination should be exercised the part of the medical profession of the country concern the patients to be sent to Minnesota for relief ; and it sho be known that, for the consumptive, merely temporary r dence here is not likely to result in permanent benefit."

ART. III.—*Observations on the Digestion of Milk.* By E BRUSH, M. D., Mount Vernon, N. Y.

MILK may be divided into two distinct varieties, accord as it is the product of cud-chewing or non-cud-chewing mals. This is a distinction to which I think sufficient at tion has not been previously drawn. The former class— of the cud-chewers, to which of course the milk of the belongs—contains a variety of caseine which coagulates a hard mass under the action of the digestive ferment during the lactic ferment. This coagulation takes plac the natural process of digestion with the calf.

During the summer I had a calf which I tied in a ble out of reach of any food, and gave it nothing but f milk from its mother ; half an hour after the ingesta of r I always found it chewing the cud. After diligent inqui have been informed that the same takes place with the sl

d the goat, the other domestic ruminant animals. We
ay from these facts explain the difficulty experienced by the
man stomach in digesting the milk of ruminating animals.

The other variety of milk—that given by the non-cud-
ewing animals, to which the human, equine, and canine races
long—does not, under the action of rennet or acids, coagu-
e into the hard mass we find in the cow's milk, but coagulates
o small granular or flocculent masses, easily diffusible.

This fact explains very simply the advantages of *kumyss*
epared from cow's milk over the milk itself, in the artificial
ding of children. In *kumyss* the caseine is—if we may be
owed so to express it—practically regurgitated and chewed;
., having been coagulated it is resubdivided, and incapable
being coagulated under any acid or ferment.

There are other differences in the various kinds of milk
ich tend to modify the conditions under which it digests.
r example, it is a well-authenticated fact that the amount
caseine in milk is always in inverse proportion to the
ount of sugar contained in it; the milk of the cud-chewers
tains the smallest amount of sugar and the largest amount
aseine, while the milk of the non-cud-chewers contains, on
contrary, the largest amount of sugar and the smallest
ount of caseine. Even in the case of cow's milk, in vary-
conditions of the animal's health, as the proportion of
eine diminishes, that of sugar increases.

Another fact, too, deserves notice. The less sugar a given
iety of milk contains, the more rapidly does lactic fermen-
on take place and consequent putrefaction follow. Now,
ilk containing a large amount of sugar will set up alcoholic
nentation under conditions the most favorable for lactic
nentation in a milk containing a small amount of sugar.
bearing of this observation is that putrefaction follows
ic fermentation, whereas alcoholic fermentation precludes
certain extent any form of putrefaction.

Here we have another reason for the beneficial effect of
nyss in the artificial feeding of children, for in *kumyss* the
ar is all changed into alcohol and its associates. There is no
bt at this time that alcohol, when properly presented, is a
ro-carbonaceous food.

I will now relate in this connection an experiment I
formed on myself, and which proved that the alcohol contai
in *kumyss*—say 3 per cent.—is all destroyed in the system

I subsisted for a number of days on *kumyss* exclusiv
taking eight bottles a day. During the time I was thus
sisting, I saved all the urine, which I distilled and redisti
and tested for alcohol. But, although I used the best kn
and most delicate tests, I failed to discover the slightest t
of alcohol.

After this I took eight bottles of *kumyss* and distill
few ounces, and drank the distillate; in four hours I dis
ered alcohol in the urine. This simple experiment show
we have said, that alcohol as contained in *kumyss* is destr
in the system, but the same alcohol, when it has underg
the process of distillation, is eliminated as alcohol.

In speaking of the difficulty presented in the digestio
cow's milk, I have mentioned *kumyss* as being the only
fect substitute for milk, as it contains all that is valuabl
milk without the indigestible coagulum. I have under
sideration other means of preparing cow's milk to rend
suitable for children's food, so that it may be prepared
those who live in places where *kumyss* can not be procu
and I may hereafter communicate to the profession the res
of these investigations and experiments.

Clinical Lecture,

Delivered at the College of Physicians and Surgeons,
York, by Prof. Francis Delafield. *Reported for*
"New York Medical Journal."

MITRAL STENOSIS.

Gentlemen: Our first patient to-day is a woman ab
thirty years of age, and, as you observe, of quite robust
pearance. She tells me at the outset that she has some tr
ble with her heart, which she learned from a physician wh

e consulted some time since; and that it is somewhat over
o years since she began to complain. The first thing that
e noticed, she says, was that, when she walked a little more
an usual, it set her coughing, and that with this cough
e expectorated a little blood; at the same time that she felt
y weak. Since then pretty much the same state of affairs
s existed, the spitting of blood continuing to occur from
ne to time. The last time this took place was about three
nths ago. The quantity of blood has never been at all
ge; there being "just a little spit," as she expresses it.
th the exception of some shortness of breath on exertion,
above symptoms are almost all that she complains of
the present time; although, since her physician told her
t she had disease of the heart, she has suffered a good
l from nervousness and mental anxiety on account of
t knowledge. She sleeps well at night, and never has
dyspnœa that interferes with her remaining with com-
t in the recumbent posture. She has a fair appetite, and
general health, as a rule, is good. Her feet are not at
swollen, although she says that quite a long time ago
y once were for a short period. She very seldom coughs
ess after walking considerably or taking other exercise.

This patient affords a very good example of one of the
ular forms of organic disease of the heart which we are
le to meet with at any time in practice. The woman, as
already been observed, is stout and healthy-looking, and
will notice in the history of her case that has just been
en that the symptoms are few and of no very grave signifi-
ce. They are, in brief, cough as the result of exercise,
h a little blood mixed with the sputa, and a comparative-
trifling shortness of breath on exertion. Besides these,
suffers very little inconvenience, and her general con-
on, as has been remarked, is very good. But, if she had
already informed us that she had cardiac trouble, the
ve symptoms would point at once to the heart as the seat
er difficulty, and would indicate, with very considerable
ainty, one special form of organic disease of that organ,
, stenosis of the mitral orifice. When such stenosis has
hed a more advanced stage, we get more numerous and

severer symptoms; but, earlier in the history, when the le is not as yet very marked, its effects upon the system are those met with in the present instance.

On auscultation of the heart we find, accordingly, there is quite a loud murmur heard just before the first s (presystolic), and limited to the region of the apex. heart is but slightly enlarged. The pulse at the wrist i well filled, and is found to be somewhat irregular.

The indications for treatment in this case are two:

1. The avoidance of every kind of active exercise. patient should, consequently, always walk and go up slowly, and should never lift heavy weights, or over-exert self in any way.

2. The regulation of the heart's action by the use of i of potassium, which should be kept up for a considerabl riod of time.

The patient now having left the room, I will take occ to say that the prognosis here is bad. How long it wi before a fatal termination is reached it is impossible to but, if the woman is able to live in a quiet manner, life perhaps be prolonged for a very considerable time. rule is that the stenosis is progressive, and after a w when it has reached a more advanced stage, it is sure to duce very serious disturbances in the system. Thus, the l will become congested, and a permanent thickening of t structure result, while the cough and dyspnœa will g more persistent and annoying. Then dropsies will occur, the kidneys become implicated, with impairment of app and digestion, and all the train of evils incident to adva disease of the heart. A certain number of patients affe with cardiac trouble die suddenly, and the present is on the varieties of such disease in which this result is proba Just why it should take place at any particular time it is d cult to explain.

PROBABLE CANCER OF THE KIDNEY IN A CHILD THREE YE OF AGE.

The mother brings this little boy here on account of d culty which he experiences in passing his urine. Urinat seems usually to give rise to considerable pain, and while sometimes he passes his water very freely, at others the quantity is very small. This trouble was first noticed about two months since. Up to that time he had always enjoyed excellent health, and with the exception of this the mother states that he still remains perfectly well in every respect.

Now, upon making an examination of the child's abdomen, I find on palpation that there is a solid mass which seems to fill up the greater part of the left side of its cavity, and the question at once arises whether it is a tumor of the spleen or of the left kidney. The handling of the growth seems to give rise to no pain, and by getting my fingers behind it I can distinctly move the portion of it near the edge, which is apparently perfectly free. The surface of the mass does not seem to be smooth, but feels somewhat nodular to the touch. The anterior portion of it does not extend quite up to the lower border of the ribs; but, as we trace it back toward the vertebral column, it is found to run up under the ribs. The walls of the back are so thin that through them I can press the whole mass forward. I will now mark out for you with ink the normal boundaries of the spleen and left kidney, and afterward those of the tumor which is here present. You perceive that it is of somewhat irregular outline, and that it measures perhaps seven or eight inches perpendicularly, as well as transversely from the vicinity of the spinal column anteriorly.

I should not like to give a positive opinion at present as to whether this tumor belongs to the spleen or to the left kidney. There has been no history, however, of any malarial trouble whatever to which the enlargement would in all probability be due if it were situated in the spleen; and on the whole I am inclined to believe that we have here a tumor of the kidney. If this is the case, it is almost certainly carcinomatous in its nature; and in this connection it is a fact of considerable interest that cancer of the kidney is a much more common affection in early childhood than in adult life. The history here is also in accordance with what I have usually found in such cases of this disease as have come under my notice. For a considerable time the child looks perfectly well, and apparently is so, with the exception of some culty in urination, as has been noticed here. In adul the contrary, in cancer of the kidney the constitutional of the disease are apt to become developed much more

Of course, in a case like this the question always con whether the child really empties the bladder or not. O ing percussion, in the present instance, over the pelvic I find that there does not seem to be any accumulat urine. Still, it would be well to pass a small flexible twice a day in order to be sure that the bladder is erly emptied; and the mother could easily be instructed manner of using it herself. If the diagnosis of carcin correct, of course the prognosis is hopeless, and in a lo shorter time the wasting and general cachexia of the will make their appearance. In the mean while the indication to be fulfilled except the emptying of the by means of the catheter, as I have suggested.

PROBABLE THORACIC ANEURISM.

Here is a man thirty-five years of age, who says complains of a constant pain in the back, and that th creased by any attempt at walking. It is about six since he first began to have this trouble. His occup that of a sewing-machine operator, and he was always health up to that time. At first he experienced the pa during the act of deglutition, but now he is never entir from it. Every time that he swallows it is aggravat he suffers less in taking liquids than solids. He so vomits his food; but this does not occur very ofte bowels are regular, and he thinks that he has not flesh. In addition to the pain in the back, he now ha or less pain in the epigastrium, and he suffers to some with shortness of breath in going up stairs or makin exertion. He does not cough at all at present, but sa he had a cough for some time, and that it was unaccom with expectoration. He has never spit up any blood appetite is fair, and he sleeps well at night.

This history of pain in the back, first noticed during d tion, but afterward experienced constantly, and more re

ompanied with pains in other portions of the body, taken
ether with the fact that it is possible for him to take all
ds of food (notwithstanding the aggravation in the pain oc-
ioned by any act of swallowing), points very strongly to
urism of the thoracic aorta, although it is not, of course,
icient of itself to base a diagnosis upon. Stricture of
œsophagus might perhaps occur to you as the probable
hological condition here; but if that were present we should
find the severe difficulty in swallowing both liquids and
ds.

Let us now see if any light is thrown on the case by a
sical examination. The man being stripped, we notice, in
first place, that the whole trunk is somewhat one-sided;
as he says that this has always been the case, we need
take this point into consideration. In front, I can not
e out any dullness on percussion over the region of the
a, nor do I find any appreciable pulsation here. Further-
e, no murmur is to be heard about the heart, the arch of
aorta, or along the course of any of the large vessels. On
ultation down the spinal column from the commencement
he dorsal vertebræ, no murmur can be detected; but,
n pressure is made over the spinous processes of the ver-
æ, it is found that there is considerable tenderness at the
t between the scapulæ, to which he refers the pain from
ch he now constantly suffers, and which he at first experi-
d during the act of swallowing. Finally, there is no dif-
nce between the pulsations in the radial arteries at the
ts, or in the carotids upon the two sides.

n the physical examination, therefore, nothing abnormal
und except tenderness on pressure at about the same point
e spinal column where the patient locates the pain from
h he has suffered all along. Notwithstanding these nega-
results, however, I still think that it is altogether probable
the trouble here is a thoracic aneurism. An aneurismal
connected with the arch of the aorta, as you are aware,
be given off from its anterior, posterior, or lower portion.
erefore, there is an aneurism of this part here, it must,
ccount of the absence of the phenomena that would other-
be produced by it, be of small size and located on the

posterior part of the arch or descending aorta. Wha
pressure is occasioned by it is evidently principally upo
œsophagus. That it does not interfere with the trach
shown by the fact that there is no cough present; but
no doubt pressing to a greater or less extent upon the b
of the vertebræ. There is no pressure, however, upon
great vessels given off from the aorta, since there is no
ence in the pulse on the two sides of the body. The pro
diagnosis in this case is, therefore, a small aneurism o
posterior part of the descending portion of the arch o
aorta, or the upper part of the thoracic aorta.

In aneurisms in this situation there is only one treat
that seems to be of any service whatever, and that is th
sistent use of the iodide of potassium. Just how it ac
such cases is not understood; but it seems to me that it
be by its effect upon the heart's action. By reducing t
a greater or less extent, it prevents the aneurismal sac
becoming as full as it would otherwise be after each ca
contraction. The ordinary contents of such a sac are a f
ous deposit around the walls and coagulated and fluid bloo
is continually being forced into it. In the natural cou
events there is, therefore, a constant tendency toward d
tion and enlargement of the sac. If now we can in any
overcome this tendency to enlargement, it is evident th
put the patient in just so much better condition as ou
forts in this direction are successful. When the syste
under the influence of iodide of potassium, the heart doe
drive the blood into the sac with so much force; and it
ther increase in size is therefore, to a great extent, preve
I have seen one very interesting case in which, under th
of the iodide, the sac not only did not increase, but act
diminished, in size. The pulsating aneurismal tumor
situated immediately under the sternum, where its dimen
could be readily appreciated; and, after the iodide had
employed for a considerable period, it decreased unt
reached the line of the chest-walls. When, however,
iodide was omitted for a time, the tumor would again b
to increase; and this was the history for two or three y
during which time the case was under observation. The e

of the iodide to be employed in such cases is somewhat
trary, and differs very greatly in different instances.
only way to determine the proper amount is to observe
effect which it has on the heart's action. At present,
patient's heart is acting too strongly; and, if the left ven-
e is allowed to go on contracting as forcibly as it is now
g, there is every reason to suppose that the aneurismal sac
go on increasing in size. We will commence by ordering
grains of the iodide three times a day; and, if, on ex-
ation after a short period, we find the heart is still acting
vigorously, will increase the dose to ten grains. In this
we can regulate the force of the cardiac contractions, I
, in such a way as to greatly retard, if not prevent, the
ase of the size of the aneurism.

FIBROID PHTHISIS.

he history of this young woman, twenty-three years of
is briefly as follows:

uring her childhood she had two attacks of whooping-
. Before she was eight years old she suffered from
, and ever since she was eight she has always had a
. Almost from the first this has been accompanied with
toration; but during the last four years the latter has
occurred twice in each twenty-four hours. It is large in
ity, of a greenish color, and characterized by a very
ive odor. She suffers from slight shortness of breath,
he says she does not feel very strong or well; but her
al appearance is certainly not indicative of any serious
e. On the contrary, she looks quite stout and hearty.

n making a physical examination, we find that there is
ess on percussion at the right apex; and also some re-
on of the chest at this point. When we listen here, we
urgling *râles;* while on the left side the breathing is a
exaggerated and the expiration sound prolonged. There
rather abnormal vesicular murmur on the left side.
is no particular change in the sound of the voice, ex-
hat it is rather louder and sharper on the right side
on the left. Behind we get good pulmonary resonance
e left side: whereas on the right there is dullness over a

great portion of the chest. On the whole right side b are hard, coarse, and subcrepitant *râles*, and at the upper cavernous and gurgling *râles*. In the left lung there i dently a certain amount of emphysema present.

Now, here is a history and a group of physical sig connection with it which are quite different from what dinarily met with. If we had the signs without the hi we would naturally suppose that this was an ordinary ca chronic phthisis; but the history, you perceive, is not in accordance with such an hypothesis. What, then, i condition here present? "Dilatation of the bronchi," I suggested. Undoubtedly a number of cavities have formed in this way in the right lung, and there is evi enough of chronic bronchitis; but what should occasio dullness that we find? "Solidification due to pneumo you say. Yes, and a certain variety of pneumonia, viz terstitial. The state of affairs found in this patient i which is not at all common in this country, but which, i may judge from the statements of the English writers, be much more frequently met with abroad. We have, bronchial dilation and interstitial pneumonia going on and at the same time there is also pleuritic thickening, is exceedingly likely to occur in cases of this kind. In sequence of this process, the upper portion of the right is now simply fibroid tissue, and there is no tubercular ment whatever about it. If there had been, originally case would have terminated long ago; and, if this had its appearance more recently, we would now find the em tion, anæmia, and hectic and other signs characteristic of condition. These are always present when tuberculos superadded to interstitial pneumonia.

The patient's breath is disagreeable when she coughs, the reason of this is that she expectorates a large quantit once. There is always an accumulation from the bronc glands in the cavities, and, notwithstanding the free expe ration, these are never completely evacuated, while the remaining in them undergoes degeneration and becomes trescent.

The prognosis here is good in one sense and bad i er; that is, it is favorable as regards life, since she may no bt get along breathing with the left lung alone for many s to come; and unfavorable as regards the recovery of the t lung.

In regard to the treatment, there are two principal indions. The first is to prevent the putrefaction of the secres in the cavities, and the second to diminish the secretion. order to accomplish the first end, systematic inhalation is most efficient measure, and this requires a certain amount ntelligence on the part of the patient; since to be of any ice it should be practiced very thoroughly, so as to pene- to the small bronchial tubes. The best agents for the ose are those which have a direct effect in preventing puctive changes in animal matter, and there are two subces which possess this quality in a preëminent degree, viz., olic and salicylic acids. It would be well, therefore, to a solution of carbolic acid vaporized by heating to the ng point, or, better, by means of an atomizer, in which n is not required. The great point in the employment of is to get it thoroughly down into the lungs.

For the second purpose mentioned, viz., the diminution of secretion of the bronchial glands, the mineral acids are most useful, and of these sulphuric acid is perhaps the In addition to the inhalations, then, we will direct the nt to take about fifteen minims of dilute sulphuric acid times a day. If this should not succeed in accomplishhe desired end, I would next try belladonna, and preferan the form of sulphate of atropia. If this failed also, we d still have another drug to fall back upon, viz., ipecac. ertain doses it is true that it has the effect of increasing chial secretion; but in others its effect is directly the ope. For the latter purpose it must be given in pretty large tities, and I would recommend in such a case as the nt one grain three or four times a day.

PARTIAL IMPACTION OF THE LARGE INTESTINE.

The next patient, who is a man of about forty-nine years e, complains principally of pain at the pit of the stomach eating, and says that he has had this in the spring and autumn for the last twenty years. It continues pretty m from one meal to another during the day, and after his ev ing meal until he gets to sleep at night. He does not su from nausea, but, if he takes tea or coffee in the mornin considerable portion of it is apt to come up again. The p is always aggravated by certain kinds of food, and there it makes a material difference to him what kind of diet uses.

The man now lying upon his back, I find on palpa over his abdomen that there is a distinct, though not l sound of gurgling produced by the pressure, and that this parently follows the course of the colon. We ought, howe not to overlook the possibility of this being in the stom instead of the colon; but, since it occupies an area corresp ing with the latter, as we have just seen, it follows that, if in the stomach, that organ must be considerably increase size, while the pylorus is much lower and further to the r than it ought normally to be. Still, I feel tolerably sure the trouble is in the colon, and especially since this w accord better with the history. Any disorder situated in large intestine will give decided symptoms referable to stomach, and *vice versa;* and the sort of pain which patient complains of may depend on an abnormal condi of this part, as well as of the stomach. On the whole, th fore, I think it best to direct our attention in the wa treatment to the colon rather than to the stomach. He that his bowels are open every day; but such a staten is perfectly compatible with an accumulation of gas and f matter in the large intestine, because the daily evacua may not be completed. In such cases one passage a da not sufficient.

The great remedy where there is this clogging of the la intestine is strychnia, and it is of service to combine it wi small quantity of atropia. In the present instance I will or a pill containing one two-hundredth of a grain of sulphate atropia and one fortieth of a grain of sulphate of strych three times a day. The patient tells me that he has got i the way of taking a little opium from time to time on accou of the pain. I should advise him to discontinue this habit e, since he will require a larger and larger quantity as time s on if he keeps up the practice.

CARDIAC, PULMONARY AND RENAL DISEASE COMBINED.

Our last patient is an old man, a native of Ireland, who he is "very bad." Last week he had swelling of the feet abdomen for the first time, but altogether he thinks he has n sick ever since the Centennial Exhibition in 1876. He noticed a cough, with some temporary hoarseness, and also ing of blood, and the latter has returned from time to time since. The last time that he raised blood was about a k ago. He feels sick and weak, sweats at nights, and rs a good deal from shortness of breath; while he has also some flesh.

This is not a very satisfactory history; but it is the best we can get from our patient, who is not overburdened intelligence. The appearance which he presents is not of ordinary phthisis, and we must probably, therefore, for some other affection of long standing which is char-ized by cough, spitting of blood and shortness of breath. e symptoms may be due to cardiac disease, as well as to nic bronchitis, with emphysema.

On making a physical examination of the chest, we find the heart's action is quite feeble, and that the apex-beat st below the level of the nipple, and a little further to the han it should be. We also get a murmur accompanying following the first sound of the heart, and limited to a extent to the base of the organ, which indicates aortic sis. Percussion over the lungs in front shows that reso-e is fair enough on both sides; while, on auscultation, et numerous coarse *râles* almost everywhere. Behind, it und that the percussion-note is a little higher in pitch it should be, and here also there are sonorous and sibi-*râles*. The urine, I may here state, has been found to in a considerable quantity of albumen. We have, then, is case a not infrequent combination, viz., lesions of eart, the lungs, and the kidneys in the same individual. nts with a history like the above, and presenting an ap-

pearance like this individual, you will find are not
likely to have phthisis.

What this man needs most of all is enough to eat.
should, therefore, at once seek admission to some wel
ducted hospital, where the cleanliness, good fare, and c
attendance will alone be sufficient to render him a great
more comfortable. It is surprising to see how greatly
patients, who have long been accustomed to the most wre
nourishment and all sorts of privation, often improve
they get into hospital and have abundant meals at re
intervals. Later it will probably be advisable to tap th
domen on account of the fluid present; but, of cours
treatment in such a case as this is only palliative.

Notes of Hospital Practice.

BELLEVUE HOSPITAL.

Service of Dr. E. G. Janeway.

Idiopathic Abscess of Liver; Rupture into the Pleura
rare case of idiopathic abscess of liver occurred in hos
and was of interest also in regard to the diagnosis and
ment. The history was as follows: A fireman aged 30,
good family history, had never suffered from any diseas
cept intermittent fever, till four months before admissio
hospital. At that time he complained of pain in the
side, which was increased by coughing or forced inspir
He was admitted on May 15, 1879. For two weeks prev
ly he had noticed a swelling on the right side, which
preceded for some time by a sensation of fullness.

Physical Examination.—Bulging on the right side
the fourth rib downward to a point one and one half
below the free margin of the ribs, with a marked proje
in the median lines below and to the left of the ensiform
tilage, reaching half way to the umbilicus. Palpation

e eighth and ninth ribs in the axillary region elicited a fric-n fremitus. Below the free margin of the ribs, there could felt the smooth border of the liver, which moved with piration. No fluctuation could be found over the liver be-ath the ribs, but the epigastric prominence gave a sense of ni-fluctuation on superficial palpation; but, on firm pres-e, the left lobe of the liver could be felt below. The per-sion note was flat over the bulged portion on the right side, ching as high as the fourth rib anteriorly and the eighth posteriorly. The line of flatness was lowered by a full piration, and raised by a full expiration. Auscultation r the flat portion gave a friction sound where the fre-us had been felt.

The diagnosis rested between: Pleurisy with effusion, pus ween the diaphragm and liver, abscess of liver, and cancer iver. By a careful consideration of the facts recorded, opinion rested between cancer and abscess, and for the wing reasons: The position of the bulging was not in r of fluid in the pleura, and the friction fremitus and d over the eighth rib, and below the line of flatness, was vor of perihepatitis and opposed to pleural effusion. The ession of the line of flatness by a full inspiration com-d the evidence against pleurisy. The friction sound of iepatitis excluded the presence of pus between the liver the diaphragm. In regard to the cause of the enlarge-: of the liver, the age was opposed to cancer. The peri-titis was not conclusive in either direction, but in favor scess, but the absence of evident cause was against such gnosis. The temperature was taken for five days with ollowing result:

ay 15th.—Temperature, P. M., 103½°.

5th.—Temperature, A. M., 98¼°; P. M., 102½°.

th.—Temperature, A. M., 100¼°; P. M., 98¾°.

8th.—Temperature, A. M., 99½°; P. M., 100¼°.

9th.—Temperature, A. M., 98¼°; P. M., 99°.

here was hardly any change till the end of May. An hy-mic needle was introduced on two occasions at a point e right side where the friction was noticed, but no pus ound.

From June 1st to June 15th, the temperature on or casion reached 102°.

June 16th.—Hypodermic again introduced at former and a small amount of serum withdrawn. The aspirator dle was then inserted, and 17 oz. of reddish pus without removed. There were no evidences of bile. The cells fatty.

17th.—During the night the patient was seized dyspnœa, pain in the side, and weakness of the heart's a Temperature, 97°.

Dr. Griswold, the house physician, made a diagno rupture into the pleural cavity, and administered stimu The flatness was found to extend over the whole right si chest. The bulging of the lower border became decreas size. The aspirator needle was introduced at the eighth space, and 160 ounces of pus removed. The pus was si to that already taken out.

19th.—150 ounces of thinner matter aspirated, with of the dyspnœa. The pus was of more recent formation probably in part to the irritation of the pleura.

25th.—Dyspnœa. Aspiration at same place attem but without success; but from the axillary region 25 o were obtained.

27th.—Died from asthenia. The temperature rose 97° at the term of rupture to 101½°, but subsequently f 100°.

Autopsy.—Nearly the whole of the right lobe of the was involved in an abscess, which communicated with pleura by an orifice sufficiently large to admit two fin The abscess was nearly empty, but the pleura contained siderable thick pus. The anterior surface of liver was sm and unbroken. The left lobe was enlarged. The ope through the diaphragm was posteriorly. There was no dence, during the course of the case, of septic poison The immediate cause of death was œdema of the left lung

The case was of particular interest, for the follo reasons:

First. That exploration with the hypodermic needle fail to indicate pus, even though a large abscess be prese

Second. That abscess of the liver may exist without assignable cause.

Third. That the temperature may not exceed that to be found in a rapidly growing carcinoma of liver. There was no record of the temperature in the early stage of the disease; it would probably have been more significant.

Fourth. In regard to treatment, though the extent of the disease in all probability precluded recovery, yet it would have been more satisfactory to make a free opening, even after the aspiration of 160 ounces from the pleura. This was not done for the reason that the obvious size of the abscess, with a pleura yielding pus, rendered the result hopeless.

Dr. Janeway reported two other cases of idiopathic hepatic abscess in Dr. E. C. Seguin's "Clinical Lectures," vol. iii., No. 5, "Points in the Diagnosis of Hepatic Affections."

CHARITY HOSPITAL.

Perforation of Femoral Artery from Ulceration of Suppurating Bubo; Ligature of External Iliac Artery; Gangrene of Leg; Death.—A sailor entered hospital February 10, 1879, suffering from a chancroid on the prepuce, which appeared eight days after coitus. Nitric acid was applied to the sore, and in a short time it healed. There was also an enlarged inguinal gland on the left side, at the upper portion of Scarpa's space, which suppurated and was opened.

April 1st.—The ulcer, which resulted from suppuration of bubo, measured 7 cm. in one diameter by 3 cm. in the other. Edges elevated. No tendency to heal. The general health of patient good. Different local remedies applied, but without benefit.

June 9th.—Ulcer measured 7 cm. by 5 cm.

July 15th.—The house surgeon, while making the morning visit, found a stream of blood the size of a darning-needle spurting from the ulcer. An effort was made to seize the bleeding vessel with a forceps, but without success. Increased hæmorrhage followed the attempt. A tourniquet and compress were applied, and bleeding arrested.

16th.—Compress removed and reapplied.

18th.—5.30 A. M., recurrence of rapid oozing ha
rhage, which was checked by digital compression kept u
half an hour. Compress again applied. 10 A. M., p
cried out that he was bleeding. Compress removed, w
stream of blood the size of the little finger spurted u
was controlled by a graduated compress and tourn
Hæmorrhage recurred subsequently when the compres
changed. No benefit was obtained by a ligature placed a
the soft parts. Compress again applied. Patient depr
from loss of blood.

19th.—3 P. M., after consultation, Dr. C. T. Poore
the external iliac artery. During the operation the inte
protruded. The peritonæum was closed with catgut su
5.30 P. M., pulse 120. 7.45 P. M., pulse 116. Leg
wrapped in cotton batting. 12 P. M., pulse 120; temper
102°. Warmth applied to feet.

20th.—7.30 A. M., pulse 120; temperature 101½°.
pain. 5.30 P. M., pulse 124; temperature 102°.

21st.—9.30 A. M., pulse 128; temperature 102¾°. 7.30
pulse 124; temperature 101½°. Gangrenous spot on
side of calf.

22d.—8 A. M., pulse 120; temperature 102°. Gan
increased. 8 A. M., pulse 120; temperature 103°.

23d.—7 A. M., pulse 120; temperature 102½°. Delir
pain in left knee. 7 P. M., pulse 120; temperature 102½°.
abdominal pain.

24th.—7 P. M., pulse 120. Restless.

25th.—9.45 A. M., pulse 120; temperature 102¾°.
water to leg and thigh. 7 P. M., pulse 125; temperature

26th.—10 A. M., pulse 126; temperature 101¾°.
jaundiced. 7 P. M., pulse 114; temperature 100¾°. Bo
moved. Gangrene stopped at knee-joint anteriorly, adva
posteriorly.

27th.—10 A. M., pulse 102; temperature 101½°. Condi
better. 6.45 P. M., pulse 120; temperature 101¾. Gang
stopped posteriorly.

28th.—Line of demarkation extended from knee-joint
teriorly to middle of thigh laterally and posteriorly. T
perature normal. 2 P. M., Drs. Poore, Ripley, and P

ided after consultation to amputate the thigh. The opera- was performed at the junction of the middle and upper d of the thigh by the house-surgeon, Dr. J. H. Bryan.

29th.—3.30 P. M. Patient in a state of shock. Pulse 120.

30th.—9 A. M., pulse 128, very weak. 7 P. M., pulse 114.

31st.—9 A. M., much improved.

August 1st.—9 A. M., no change. Pulse 120; tempera- 101°.

2d.—9 A. M., delirious. Pulse 138; temperature 103°. M., pulse 120; temperature 103°.

3d.—9 A. M., part of wound sloughing. Pulse 120; tem- ture 103¾°. 7 P. M., urine inky; no albumen. Pulse ; temperature 103°.

th.—9 A. M., crepitation over thigh. Pulse 126; tem- ture 102°. 9 P. M., patient becoming comatose.

th.—9.30 A. M., died.

Autopsy.—Left groin showed large ovoid ulcer, which laid Poupart's ligament and the fascia lata, and extended down he sheath of the femoral vessels.

External iliac artery ligated an inch and a quarter above part's ligament. The vessel for an inch above the ligament one fourth of an inch below superficially ulcerated. The ral artery had two thirds of its walls destroyed for four es of its course. It contained a thrombus which extended o the site of ligature. Femoral vein had an oval ulcera- one sixteenth of an inch long, situated one and a half below Poupart's ligament. Did not contain a thrombus.

Proceedings of Societies.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, May 28, 1879.

Dr. JOSEPH W. HOWE, Vice-President, in the Chair.

rethral Calculi of Camel.—Dr. LIAUTARD presented spe- ens of calculi of the urethra, obtained from a camel. When

he was called to see the animal there was retention of
with constipation. All attempts to pass a catheter were
out effect, and it was necessary to introduce the needle
aspirator into the bladder. Seventy ounces of urine were
drawn. On the following day 40 ounces were aspirated
on the succeeding day the camel died. The autopsy sh
the meatus so small as to only allow of the introduction
knitting-needle. A short distance within, a calculus was f
and further on the urethra was again contracted. The
of the kidney contained calculi. Dr. Liautard had an o
tunity to make an autopsy on another camel, and found c
in the pelvis of the kidney. The latter animal was kille
cause of fracture of the bones of the leg.

Abscess of Liver—Microscopical Anatomy.—Dr. C. Hem
exhibited specimens illustrative of abscess of the liver.
subject had been studied by Dr. J. C. Davis, who found
cally that, with the exception of traumatic suppuration
that caused by parasites, the majority of cases were d
embolism of the portal vein. The invariable point of
was the interstitial connective tissue, and consecutively
of a lobule, or even a number of lobules, might enter th
mation of an abscess. In the interstitial connective tissu
living matter, both in the protoplasmic bodies and i
basis-substance, was considerably augmented, and app
in the shape of coarse, shining, homogeneous granules,
were transformed into inflammatory or medullary elem
These elements were at first connected with each oth
delicate threads of living matter; and only after the ru
of these threads the medullary elements became isolate
represented pus corpuscles. The liver epithelia first exhi
a coarse granulation and increased nucleus, which, after
tain changes, passed into pus corpuscles. No emigratio
colorless blood corpuscles could be made out. Around a
abscess, a capsule of connective tissue was formed from
medullary elements, which were transformed into a str
or homogeneous basis substance.

Dr. E. G. Janeway said cases of abscess of the liver
more common in the city than generally supposed.
were the sequelæ of dysentery, and of abscesses about w

form appendix and rectum. In one case no cause could be assigned.

Irreducible Dislocation of Phalango-Metacarpal Articulation; Operation.—Dr. Frederick Lange presented a patient upon whom he had performed an operation for the reduction of an old dislocation of the finger. The articular extremity of the phalanx overlaid the end of the metacarpal bone. An incision was made anteriorly and a portion of the capsule which had been wedged between the bones was removed. The dislocation was then reduced without difficulty.

Gun-shot Wound of the Finger; Excision of the Phalanges.—Dr. Lange presented a man upon whom he had performed excision of the phalanges of the index finger. The operation was called for because of a gun-shot wound of the finger, the bullet becoming encapsulated and rendering the hand useless. As a result of excision the finger was much shortened.

Excision of the Lower End of Humerus.—Dr. Lange presented a boy showing the result of an excision of the elbow-joint. The operation was performed for an injury to the elbow resulting in laceration to the soft parts and fracture and dislocation of the humerus. The tendon of the triceps was not injured. The arm and forearm was placed in a plaster-of-Paris dressing for six weeks. It was then put up in a silicate bandage so as to allow of passive movements. Cicatrization was complete at the end of the third month, the time at which he was exhibited to the society. The forearm could be flexed to the extent of 90°. The boy wore an apparatus consisting of a splint involving the arm, and another the forearm. They were connected near the elbow by strong rubber bands, which assisted in increasing the flexion. The arm had a ginglymoid joint, and in this respect was unlike the flail-like extremity which often results from excision of the elbows. The operation was subperiosteal.

Dr. Briddon doubted the advantage of a subperiosteal operation, for the reason that there usually was a tendency in time to anchylosis. He thought the flail-like arm was more useful than generally supposed. He referred to such a case which was at first aided by an apparatus, but eventually the arm could be used without any support. He thought there was greater danger of the surgeon removing too little too much bone in the operation.

Abortion; Fatty Placenta.—Dr. Mary Putnam Jacob sented a placenta at five months which had the appea of fatty degeneration. The woman ceased menstruati months before the abortion. At the fourth month of nancy she fell, and then felt as if something was torn awa few weeks later she was delivered of a macerated fœtus c months. The placenta was given to Dr. Heitzman to exa

Tubal Pregnancy, with Corpus Luteum on the Opposit —Dr. E. G. Janeway presented a specimen of tubal preg obtained from a patient who died from internal hæmor The woman was thirty-two years of age. She complained vere pain, and died from collapse fifteen hours after the At the autopsy two quarts of blood were found in the ab nal cavity. The left Fallopian tube contained a sac on long. The embryo was an eighth of an inch in length the anterior border of the Fallopian tube there was a rupture an eighth of an inch wide. A point of interest case, difficult of explanation, was the existence of a luteum on the opposite side.

Compound Dislocation of Ankle.—Dr. Joseph W. presented a man who had received an injury, and was at St. Francis's Hospital. The case was reported at a pr meeting. The man was able to move his foot withou culty. The injury was received on February 13, 187 consisted in a simple fracture of the tibia and fibula left side, and a compound dislocation of the ankle-joint right, with protrusion of the bones. The dislocation duced and the wound dressed antiseptically. There synovitis or anchylosis, and after eight weeks the patie able to walk about the ward.

Stated Meeting, June 12, 1879.

Dr. Joseph W. Howe, Vice-President, in the Chai

Strangulated Inguinal Hernia; Wood's Operation.—I H. Heineman presented a specimen of intestine taken f patient who died from peritonitis following an operation for strangulated hernia, and who had previously been operated on for the radical cure of the disease in the Homœopathic Hospital. The specimen was presented on behalf of Dr. Erskine Mason. The patient was forty-five years of age, and entered Roosevelt Hospital June 1, 1879, suffering from strangulated inguinal hernia, which formed a tense and fluctuating globular tumor. There was also pain in the abdomen. The case was operated on, but death took place on the second day, from general peritonitis.

Autopsy.—Recent lymph was found over the whole surface of the peritonæum. The ileum, at a distance of eight inches from the ileocæcal valve, was indented both on the mucous and serous surfaces. The hernia was strangulated by a band of false membrane. The operation for radical cure had nearly closed the inner abdominal ring. The inguinal canal was contracted but pervious.

Infantile Uterus.—Dr. HEINEMAN also presented an undeveloped uterus, which was obtained from a girl of seventeen. She was well developed in every other way.

Osteo-Myelitis of Shoulder.—Dr. LANGE presented a girl, aged twenty, who had suffered from osteo-myelitis of the shoulder-joint. The disease began in the shoulder, but subsequently the hip- and elbow-joints became affected. The diseased portion of the humerus was removed. There was but limited motion in the joint. Dr. HOWE thought the case was one of suppurative arthritis, from the fact that not only the shoulder but the elbow- and hip-joints were affected.

Fibroma of Uterus.—Dr. FINNEL presented a specimen of uterine tumor removed from a woman aged fifty-eight. The uterine canal measured five inches. The tumor sprang from the fundus, and was of the mural variety. There was no history of uterine disease during life.

Uterine Tumor; Bright's Disease.—Dr. S. N. LEO presented a uterine tumor removed from a patient, aged forty-nine, who died from Bright's disease. The abdomen was aspirated to remove the dropsical fluid. The perforation did not close. Death took place from peritonitis.

Bibliographical and Literary Notes.

Art. I.—*Annual Reports of the Supervising Surgeon-General of*
rine Hospital Service of the United States, for the Fiscal Ye
and 1877. By John M. Woodworth, M. D. 8vo, 1 vol., pp.
Washington: Government Printing-Office, 1878.

The Marine Hospital Service of the United States
was inaugurated in 1798, has attained an important p
and is to-day a flourishing organization. In review
present report we must acknowledge that, in some res
is the best we have ever read. Much benefit to o
and disabled seamen has resulted from the importan
which the service has accomplished. In the appendi
latest report we find the following articles: "The A
of the Metric System of Weights and Measures for
and Pharmacal Purposes," "Physical Examination
men," "River Exposure and its Effects upon the
"Yellow Fever at Savannah, Ga., in 1876," "Yellow
at Savannah and Brunswick, Ga., in 1876," "Yellow
Epidemic at Fernandina, Fla., in 1877." The several
are concisely and clearly written.

Art. II.—*Naval Hygiene.* By Joseph Wilson, M. D. Second
1 vol., 8vo, pp. xx.–174. Philadelphia: Lindsay & Blakiston

The work before us is certainly more interesting
medical officers in our naval and mercantile marine
than to the general practitioner. It completely sup
want long felt by our naval service, and we heartily
mend that a copy of the present edition be placed
library of every medical officer in the department.
thor divides the work into thirty chapters, many of
are concise, others quite elaborate and particularly well
up. Chapter xvi., on "Botany," contains a few bo
illustrations which are exquisitely drawn and colored.
gether the work is exceedingly good, and fully susta
reputation of the department.

ART. III.—*On the Therapeutic Forces.* By THOMAS J. MAYS, M. D. 12mo, 1 vol., pp. 148. Philadelphia: Lindsay & Blakiston, 1878.

THIS little volume is divided into seven chapters: the first is a general introduction to the work; the second is devoted to the study of the general laws of the action of forces on the animal body; the third, of the chemical stimulants; the fourth, of the mechanical stimulants; the fifth, of the mechanical stimulants, continued; the sixth, of the narcotics; and the seventh and last consists of a recapitulation of the foregoing chapters. The several chapters are very clearly brought out by the author, and in that on chemical stimulants he gives a very graphic description of the actions of these agents.

BOOKS AND PAMPHLETS RECEIVED.—Notes on the Yellow Fever Epidemic at Hickman, Ky., during the Summer and Autumn of 1878. By John R. Proctor.

The Advantages and Accidents of Artificial Anæsthesia, being a Manual of Anæsthetic Agents and their Modes of Administration, considering their Relative Risks, Tests of Purity, Treatment of Asphyxia, Spasms of the Glottis, Syncope, etc. By Laurence Turnbull, M. D., Aural Surgeon to Jefferson College Hospital, etc. With 25 Illustrations of the various Forms of Inhalers, etc. Second edition, revised and enlarged. With 27 Illustrations. Philadelphia: Lindsay & Blakiston, 1879. Price, $1.50.

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Reports on the Progress of Medicine.

CONTRIBUTED BY DR. G. R. CUTTER.

SURGERY.

Fatty Embolus following Severe Injury.—Dr. Désérine has made autopsies on a number of persons whose death followed a few hours after the receipt of severe injuries, and found in the lungs fatty emboli in great quantities. He thinks it a proper subject for investigation, as to whether these emboli may not be one of the causes of death said to be from shock (nervous commotion). He has made a series of experiments on animals, from which he has ascertained that he can produce in their lungs fatty emboli similar to those observed in man as a result of severe traumatisms. From a surgical point of view, it would therefore seem desirable to remove as soon as possible such a focus for these emboli as is presented by a grave fracture.—"France Méd.," and "Giorn. Int. delle Sci. Med.," Nos. 3 and 4, 1879. G. R. C.

Removal of Left Pulmonary Lobe.—An Indian boy, eight years of age, was wounded by an arrow in the lower left thoracic region, between the sixth and seventh ribs. He removed the arrow himself, drawing with it a great portion of the lung. A physician who saw the case declared that he could do nothing for the boy, and that the projected tissue was fat. Dr. Grinnell saw the patient twenty-four hours later; the extended lung had the appearance of a piece of liver, and gave off a strong and bad odor. After giving chloroform, a ligature was placed about the wound, and a piece of the protruding tissue was removed measuring four and one half inches long by two and one half inches wide. The portion of lung behind the ligature was washed with chloride of iron and returned to the thorax, and the wound sutured. There was some suppuration for a few days, and the ligature came away on the fifteenth day after the operation, giving exit to much pus, soon after which the boy was quite well.—"Riv. Set. di Med.," No. 2, 1879. G. R. C.

THEORY AND PRACTICE.

Lemon-Juice for Hypertrophied Tonsils.—Saint Germain has found on-juice a very simple and efficacious remedy for the suppression of ertrophied tonsils. In young subjects, he pencils the tonsils with on-juice twice a day. A cure is usually obtained in two weeks. He not consider more heroic treatment justifiable till this remedy has d.—“Rev. de Thérapeut.,” and “Jour. des Sciences Méd. de Louvain,” 4, 1879. G. R. C.

Contagiousness of Abdominal Typhus.—Abdominal typhus was brought the lunatic asylum of Werneck by an insane patient. The hygienic litions of the institute are excellent. The drinking-water, cloaca, nliness of the grounds, and all the conditions of the place are unfavor- to the propagation of the disease. Many persons were infected by soiled clothes, and most of the attendants and patients who slept near case above referred to were also attacked. When a patient with nus was carried into another apartment where the disease had not ted, the persons near the former were soon attacked. Dr. Schwabb ludes from this that abdominal typhus is transmissible from person erson.—“Boyer. Intelligenzbl.,” and “Riv. Set. di Med. e Chirurg.,” 2, 1879. G. R. C.

Miscellany.

The Contagium of Syphilis.—Numerous experiments with contagium of syphilis have recently been made by Klebs, are summarized by the “London Medical Record.” Man the lower animals have been inoculated, and clinical and roscopical observations carefully made. The results of the eriments are summed up in the following conclusions:

1. Syphilis in man can be communicated to lower animals noculating them with portions of the syphilitic new for- ions. But the course of the disease is not the same for genus. With apes the disease is quite the same as in ; rabbits have given other results, which, if not so strik- nevertheless will not allow any mistake as to their simi- y with the disease in man.

2. In syphilitic new formations in man, certain low fun- organisms are found, which develop into peculiar forms elicomonads.

3. By the transference of these to selected animals, changes

are set going which correspond not only with those of genu syphilis in man, but also with those of inoculated syphili animals.

A New Acoustic Apparatus.—Dr. William A. McKe ("British Medical Journal," July 5, 1879), of Belfast, devised a new acoustic apparatus for which he claims sup ority over all other forms of tubes and ear-trumpets. T idea of the instrument is based on the fact, first, that, si sound diminishes inversely as the square of the distance, ordinary aids to hearing are entirely insufficient as well annoying, and much larger instruments are needed; seco on the fact asserted by Dr. McKeown that intensified sou has a curative effect on many kinds of deafness. He cla that deafness is often due to a rigidity of the parts concer in conveying the vibrations, and that this may be impro by exercising them, just as stiff joints are relieved by frict and exercise. The apparatus devised accomplishes the dou object of allowing the patient to hear while using it, and permanently improving the deafness. It consists of two v large trumpet-shaped tubes which are attached to each arm the chair which the patient usually occupies at home or wh at business. The small aural extremities are made very fle ble, so that while the patient sits with one in each ear he c still move his head about considerably. The inventor clai a great success for his tubes in two cases where they ha been employed.

Lipæmia and Fatty Embolism in Diabetes.—The sudden o currence of dyspnœa, coma, and death, in cases of diabe mellitus, has long been noticed. In 1874 special attention w called to it by Kussmaul, and as a result of various investig tions it has been thought probable that the symptoms we due to the presence of acetone in the blood, this acetone bei produced by the fermentation of grape sugar in the stomac or possibly the change taking place in the liver. Prof. Sa ders and Mr. Hamilton have given a much more rational e planation of the symptoms, referred to in the "Edinburg Medical Journal." They found in the blood of two cases e

ined a great deal of fat, while the capillaries of the lungs,
l to a less extent those of the kidneys, were plugged with
y emboli. The embolism was quite extensive enough to
lain the dyspnœa; the subsequent coma they believed to
lue to carbonic acid poisoning. They call attention to the
that the lipæmia of diabetes has been but little studied,
may have important bearings on the pathology of the
ase.

A Scarlet-Fever Epidemic.—Dr. L. N. Davis, of Farmland,
., gives an interesting account in the "Medical and Sur-
l Reporter" of an epidemic of scarlet fever which has
ailed in that place since last December. It began in a
mild form—so mild, indeed, that some doubted whether
ere scarlatina at all. After a slight lull in the disease,
ever, it broke out again, and this time with great malig-
y. In four of the cases it was possible to determine that
incubation was exactly four days. It is noteworthy that
ly every physician who passes through an epidemic fin-
his experience with a new and different conclusion in
rd to the treatment of the fever. Dr. Davis has no faith
y of the ordinary remedies, but announces his enthusias-
elief in the sulphur treatment. The results, he says, are
elous, though the *modus operandi* is inexplicable.

ppointments, Honors, Etc.—The degree of LL. D. has been
rred by the University of Vermont upon Professor Wil-
Darling, F. R. C. S., of the medical department of the Uni-
ty of the City of New York. The same degree has been
rred by Amherst College on Drs. J. Marion Sims and
man J. Bumstead. Dr. James L. Little, Professor of Sur-
in the University of Vermont, has been appointed Clinical
ssor of Surgery in the University of New York, *vice* Dr.
h W. Howe, resigned. Dr. J. Lawrence Smith, of Louis-
Ky., has been elected member of the Institute of France,
ccessor to Sir Charles Lyell in the department of miner-
and geology, having obtained forty-two out of forty-
votes. Mr. F. B. Carpenter has just finished a near-
ll-length portrait of Dr. Crawford W. Long, late of

Athens, Ga., which is to be placed in the State Capitol at
lanta, Ga., at the order of the alumni of the Georgia Uni
sity. It is in honor of the discovery made by Dr. Long, Ma
30, 1842, that inhalation of sulphuric ether renders a pat
insensible to the pain attending a surgical operation. Pro
sor Byford, of Chicago, went to Cork, Ireland, by official
vitation, to deliver an address before the British Medical A
ciation.

The Missouri State Medical Society.—The annual mee
of the Missouri State Medical Society was held in Col
bia. The assemblage was called to order, May 20th,
Dr. E. W. Schaufler, of Kansas City. Dr. G. M. B. Mau
of St. Louis, was elected president for the ensuing y
and the following report of the committee on nominat
was received and adopted: Vice-presidents, W. A. McA
ter, C. L. Hall, W. H. Bryant, C. A. Thompson, and
N. Girard; Secretaries, A. J. Steele and W. E. Tischell;
responding Secretary, E. C. Evans; Treasurer, A. B. Sl
The next annual meeting will be held in Carthage, Mo.
the third Tuesday in May, 1880.

Prize Essay on Diphtheria.—The Empress of Germany
offered a prize of 2,000 marks ($500) for the best essay on di
theria. The conditions are that the writer is to bring forw
important *new* facts as to the essential nature of the dise
especially with regard to the infectious matter which pro
gates it, its dissemination, and the means for arresting its p
ress. The essays may be written in English, German,
French, and be sent to Professor V. Langenbeck, Berlin,
W., 3 Roonstrasse, on or before December 15, 1880.
Committee of Award consists of Professors Klebs, of Prag
Liebreich and Virchow, of Berlin; Von Nägeli and Oer
of Munich; and Thiersch, of Leipsic. As is usual, a mo
is to be attached, and a similar one sent in a sealed envelo

The Topical Use of Ergot.—The value of the local use
ergot is receiving endorsements from various quarters. It
particularly applicable in catarrhal diseases of the eye a
throat. In chronic conjunctivitis it may be employed in

ength of gr. x of the extract to ℥j of water, a little glyce-
e being added to preserve the drug. In chronic pharyngitis,
ien the secretion is not very great, it makes an excellent in-
edient of a gargle, or it may be used with tincture of iodine
d applied with a probang. In cases of nasal catarrh, as
ggested by Dr. W. C. Dabney, it may be applied by means
gelatine bougies. In using the ergot it should generally be
nbined with glycerine, as that agent both preserves it from
composition and keeps it longer in contact with the diseased
face.

Bone-Marrow not an Hæmatopoietic Organ.—The very gener-
y received opinion that the marrow of bones has an hæmato-
ietic function is denied by M. Pouchet ("London Medical
cord"), who has been making a series of experiments in
ard to the matter. He experimented upon dogs, cats, and
vls. His method of procedure consisted in bleeding the
mals periodically, and removing the tibiæ between succes-
e bleedings for the purpose of examining the medulla. His
nclusions are that bone-marrow makes no blood-corpuscles.
advances the not very original or satisfactory theory that
red blood-corpuscles either originate spontaneously or are
olved as a kind of product from the white blood-corpuscles.

Ovariotomy and Cold Affusion in the Woman's Hospital.—
ring the past ten months, from September, 1878, to July,
79, Dr. Thomas has performed ovariotomy twenty-two
ies in this institution.

Out of the twenty-two cases, cold affusion, by Kibbee's
thod, has been employed in nine, with the result of twenty-
recoveries, and one death.

The death occurred in a patient sent to the hospital, in a
st forlorn condition, three weeks after delivery. The opera-
n was resorted to as her only chance, as she was rapidly
king, and she died from exhaustion. In this case cold
ision was not used.

Curability of Insanity.—In a paper read before the College
Physicians and Surgeons, Philadelphia ("Medical and Sur-
al Reporter"), Dr. Isaac Ray discusses the question of the

increase and curability of insanity, and makes the followi
statement in regard to the disputes upon these points:

1. Under the influence of highly civilized life the conser
tive powers of the constitution have been somewhat dep
ciated, and to that extent impaired the curability of insani

2. During the last fifty years cerebral affections, in wh
insanity is only an incident, have been steadily increasing,
thus diminishing the proportion of recoveries.

Treatment of Color-blindness.—Dr. P. D. Keyser, in
"Boston Medical and Surgical Journal," relates the hist
of a dyer who was very markedly color-blind. He could
distinguish reds on green or blue grounds; gray-brown loo
like green, lead like pink, and so on. He was made to l
at these various colors through a solution of fuchsine (gr.
f ʒj) contained between two thin layers of glass, and m
remarkable improvement was produced. It is thought to
due to the polarizing and absorbing power of the fuchsine.

Warm Water as a Surgical Dressing.—Further testimony
the value of this agent is given by Dr. A. H. Gollet in
"American Medical Journal" for July. Twenty cases
cited, and the conclusions drawn from them are: That
warm-water dressings prevent or arrest erysipelas, and ha
a rapid curative effect upon the disease; that gangrene
be arrested, and thus permit amputation nearer the extre
ity of the limb; and that pyæmia may be prevented by th
use.

How to postpone the Use of Spectacles.—Dr. W. Cheatha
in the "Louisville Medical News," states that in sulphate
eserine we have a safe remedy by which the wearing of glass
can be put off several years. In presbyopia there is loss
distinct near vision caused partly by weakness of the cilia
muscle. Eserine contracts this, and time assists in restori
accommodation. A solution of the strength gr. j to ℥j
water is made, and a drop of this put in each eye at be
time.

Association of Medical Superintendents of Institutions for the Insane.—The thirty-third annual meeting of this association was held in Providence, R. I. The officers elected are Dr. C. A. Walker, of Boston, president; Dr. J. H. Callender, of Nashville, Tenn., vice-president; Dr. John Curwen, of Harrisburg, Pa., secretary and treasurer. The next place of meeting is Philadelphia.

Puerperal Metritis.—Dr. J. B. Walker ("Medical and Surgical Reporter") considers this a much more frequent disease than is generally supposed, and states that it is rare for the women in the Philadelphia Hospital to pass through the puerperal condition without some inflammation of the womb. He is convinced of the great value of blood-letting in this condition, and advises its more frequent use.

Malaria the Cause of Leprosy.—Mr. Erasmus Wilson says that leprosy, the most loathsome, awful, and incurable of diseases, is entirely due to the malarial poison. Dr. L. P. Yandell, who quotes this statement in the "Louisville Medical News," agrees with Mr. Wilson. We can score another disease for quinine, and send the lepers to live among the branches of the eucalyptus globulus.

No Rickets in Kentucky.—"Here in Kentucky," says the "Louisville Medical News," "rickets, genuine rickets—such as one sees in the London Hospitals, with big epiphyses and limber ribs—does not exist."

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department, United States Army, from July 14 to August 13, 1879.

MOORE, JOHN, Major and Surgeon.—Granted leave of absence for one year, with permission to go beyond sea. S. O. 171, A. G. O., July 24, 1879.

Webster, Warren, Major and Surgeon.—Granted leave of abs
for three months. S. O. 181, A. G. O., August 5, 1879.

White, C. B., Major and Surgeon.—Granted leave of absence for
months on Surgeon's certificate of disability. S. O. 171, C. S., A. G.

Girard, J. B., Captain and Assistant Surgeon, Fort Davis, Tex
Granted leave of absence for one month on Surgeon's certificate of
bility, with permission to leave limits of the Department. S. O.
Department of Texas, August 8, 1879.

Moffat, P., Captain and Assistant Surgeon.—Assigned to duty a
new post in the vicinity of Lake Chelan. S. O. 96, Department of
Columbia, July 28, 1879.

Harvey, P. F., Captain and Assistant Surgeon.—Relieved from
at Fort Buford, D. T., and assigned to duty at Fort Randall, D. T.
84, Department of Dakota, August 2, 1879.

Semig, B. G., First Lieutenant and Assistant Surgeon.—Assigne
duty at Fort Fred. Steele, Wyoming Territory. S. O. 61, Departmen
the Platte, July 15, 1879.

Crampton, L. W., First Lieutenant and Assistant Surgeon.—Reli
from duty at Fort Randall and assigned to duty at Fort Buford,
S. O. 84, C. S., Department of Dakota.

Kane, J. J., First Lieutenant and Assistant Surgeon.—To proce
Santa Fé, New Mexico, and report to the Commanding Officer, Distri
New Mexico, for assignment to duty. S. O. 144, Department of Miss
July 26, 1879.

Banister, J. M., First Lieutenant and Assistant Surgeon.—Assi
to temporary duty at Fort Leavenworth, Kansas. S. O. 151, Depart
of the Missouri, August 7, 1879.

Brewster, W. B., First Lieutenant and Assistant Surgeon.—Assi
to duty at Fort Robinson, Nebraska. S. O. 64, Department of the Pl
July 26, 1879.

Appel, A. H., First Lieutenant and Assistant Surgeon.—To repa
Fort Peck, and report thence by letter to Colonel N. A. Miles, Fifth
fantry, for duty. S. O. 81, Department of Dakota, July 24, 1879.

Richard, Charles, First Lieutenant and Assistant Surgeon.—Assi
to temporary duty at Fort Buford, D. T. S. O. 83, Department of Dak
July 30, 1879.

Carter, W. F., First Lieutenant and Assistant Surgeon.—To pro
to Fort Concho, Texas, and report to the Commanding Officer, Dist
of the Pecos, for duty in the District. S. O. 164, Department of Te
August 4, 1879.

Storrow, S. A., Major and Surgeon.—Died in San Francisco, C
July 12, 1879.

Fitzgerald, J. A., Captain and Assistant Surgeon.—Died at Colum
Pa., August 11, 1879.

READING NOTICES.

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BUFFALO LITHIA WATERS.

Buffalo Lithia Springs, in Mecklenburg County, Va.—In view of the extensive use of these waters by the public, and the estimation in which they are held by the profession, we deem some notice of their action and uses not inopportune. Under the above title we include the waters of four springs, distinguished by number. Nos. 1 and 2 are the Lithia waters proper, Nos. 3 and 4 being Chalybeate water. Our remarks will be confined to the water of Spring No. 2, which has gained the widest reputation and possesses the most extended application. This water belongs to the Alkaline class, or perhaps, according to Dr. Walton's classification, to the Alkaline-Saline class. The peculiar virtue of the water seems to rest not alone in the exceptionally large amount of potassium carbonate, but also in the unusual amount of lithia carbonate found in it, for it has proved far more efficacious in certain affections than the simple alkaline waters. Its action on the system may be summed up as follows: It is *diuretic*, increasing the amount of urine, and, at the same time, reducing its acidity; it is *diaphoretic* and mildly *laxative*, in some cases *purgative*; it is decidedly *cholagogue*; it is *blenorrhetic*, modifying and restraining morbid secretions from all the mucous surfaces, more especially those of the genito-urinary organs; it is *narcotic*, restoring tone to the depressed nervous system and producing nervous exhilaration, increases the appetite, promotes digestion, neutralizes acid, and is powerfully alterative. From the foregoing it may be inferred that the extent of its application is wide. The principal maladies in which its use is indicated are, Gout, Rheumatism, Uric Acid, Gravel, Chronic Inflammation of the Genito-Urinary Apparatus, including the peculiar Diseases of Women, Acid Dyspepsia, Nervous Depression, Chronic Malarial Diseases, Engorgement of Liver, Tendency to Formation of Gall-stone, etc. Its *modus operandi* in many of these complaints is evident, but in others experience alone has established its value. Various theories have been advanced to explain its action. Its chemical composition marks it out as an efficient agent in the treatment of the so-called uric-acid diathesis and the evils that result therefrom, but its influence extends further than a simple neutralizing of the acid, for by its alterative power it so modifies the processes of nutrition as to tend to a permanent relief of the diseased condition. In uterine inflammations its beneficial action has been attributed to its diuretic influence, its tonic action on the nervous system, etc. These waters have ascribed to them, by a number of intelligent professional men, marked power over the albuminuria of pregnancy and also of scarlet fever.

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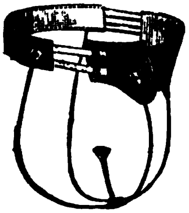

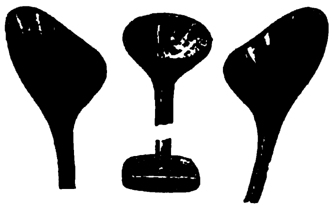

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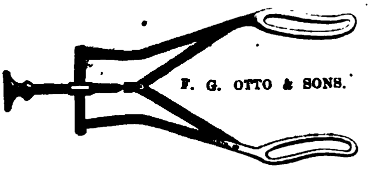

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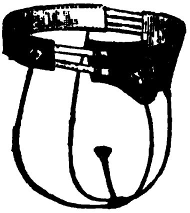

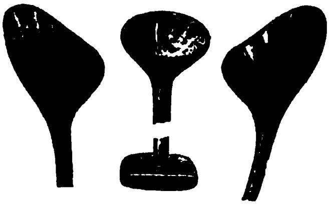

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FREMONT, OHIO, *April*, 1878.

DEAR SIR:

It is now five years since we first introduced and began the manufacture of Extract of Malt in the United States. It has been our aim to furnish the medical profession in America with a malt-extract equal to the best German make, and (by saving the expenses of importation) much cheaper than the foreign article can be afforded. For the manner in which our efforts have been appreciated by the medical profession we desire to express our warmest thanks.

The difficulties attending the manufacture of Extract of Malt in large quantities can be overcome only by that kind of skill which is acquired by experience. Its constituents must receive no injury by the process, and good flavor and keeping quality, adapting it to all climates, must characterize the product. All are familiar with the striking difference between certain celebrated brands of ale and porter—and yet the poorest as well as the best is, or should be, produced from barley-malt and hops. Success greatly depends, of course, upon the employment of none but the best material; but it is by the use of specific and long-tried procedures that results are obtained which are so difficult to rival.

We do ourselves but simple justice in stating that our *entire attention* is, and for many years has been, *exclusively* devoted to the manufacture of Extract of Malt for medicinal purposes, and that we give our undivided personal attention to each step in the delicate process by which Extract of Malt of excellent quality can alone be made.

Under these circumstances, it is unreasonable to suppose that the various manufacturers of fluid extracts, elixirs, pills, etc., who (attracted by the high reputation of our Extract of Malt) have recently, in various sections of the country, undertaken the manufacture of a similar article, should generally succeed in producing it of a quality according with the fulsome praise with which their advertisements are filled. While being perfectly willing to let the reputation of our Extract of Malt rest upon its real merits, we owe it to the medical profession, as well as to ourselves, to give warning against imposition.

It has come to our knowledge that certain articles extensively advertised as "pure" and "genuine extract of malt," are composed chiefly of the substance called GRAPE-SUGAR or MALTINE, which, as is well known, is the product of the action of sulphuric acid upon starch subjected to a

high temperature. This artificial grape-sugar or glucose, which is extensively manufactured from corn-starch, is now being used in immense quantities, instead of ordinary cane-sugar, in the sophistication of confectionery, sugar-house syrup, "strained honey," native wines, and canned fruits, and by some brewers in the manufacture of beer and ale. The cheapness of this artificial product of Indian-corn constitutes the chief inducement for this species of substitution for barley-malt and cane-sugar.

Again, an extract of malted grain is manufactured for the purpose of obtaining *diastase*, which (simple and variously combined) is much used in medicine. The appearance of the extract is but slightly changed by being deprived of this important constituent, although it is unnecessary to add that its value as a medicinal agent is thereby greatly impaired. Nevertheless, this very substance, which is little more than refuse material, in the manufacture of diastase, is now being offered for pure malt-extract.

It is *malt-extract* prepared from Barley Malt combined with the proper proportion of Hops, that has been for many years the standard medicinal nutritive employed by the medical faculty of Europe, and especially of Germany. Its value has been established by experience, and its use in the treatment of almost all forms of disease of nutrition is constantly extending. We shall continue to devote the most scrupulous attention to the maintenance of the reputation of our malt-extract, by the careful selection of material, and by unwearied personal attention to manufacturing details.

Attention is respectfully directed to the accompanying extract from Ziemssen, and also to our circular and testimonials elsewhere printed.

Very respectfully,

TROMMER EXTRACT OF MALT CO.

From Ziemssen's Cyclopædia of the Practice of Medicine, Vol. XVI., page 474:

"The Malt Extract prepared from Trommer's receipt is designed to fulfill much the same purpose as Cod-Liver Oil, carbo-hydrates (malt-sugar, dextrin) taking the place of fatty matter. The simple (much or little hopped) and the chalybeate form of Malt Extract are coming more and more into favor as substitutes for the oil; they are more palatable and more easily digested, and should, therefore, be preferred in the dyspeptic forms of anæmia. During the last few years Malt Extract has almost entirely taken the place of Cod-Liver Oil in the treatment of phthisis and other wasting diseases, at the Basle Hospital, and we have as yet found no reason for returning to the use of the latter remedy. The Extract may be given from one to three times a day, in doses varying from a teaspoonful to a tablespoonful in milk, broth, beer, or wine."

TROMMER'S EXTRACT OF MALT.

The rapidly-increasing demand for our Improved Extract of Malt, during the four years that it has been manufactured and offered to the medical profession in America, justifies the belief that in its production here we are meeting a generally-felt want.

Long experience in manufacturing Malt Extract has enabled us to completely overcome the many difficulties attending its manufacture in large quantity; and we positively assure the profession that our Extract of Malt is not only perfectly pure and reliable, but that it will keep for years, in any climate, without fermenting or moulding, and that its flavor actually improves by age. Our Extract is guaranteed to equal, in every respect, the best German make, while, by avoiding the expenses of importation, it is afforded at less than half the price of the foreign article.

The Malt from which it is made is obtained by carefully malting the very best quality of selected Toronto (Canada) Barley. The Extract is prepared by an *improved process*, which prevents injury to its properties or flavor by excess of heat. **It represents the soluble constituents of Malt and Hops**, viz., malt sugar, dextrine, diastase, resin and bitter of hops, phosphates of lime and magnesia, and alkaline salts.

Attention is invited to the following analysis of this Extract, as given by S. H. Douglas, Professor of Chemistry, University of Michigan, Ann Arbor.

TROMMER EXTRACT OF MALT CO.: I inclose herewith my analysis of your Extract of Malt:

Malt Sugar, 46.1; Dextrine, Hop-bitter, Extractive Matter, 23.6; Albuminous Matter (Diastase), 2.469; Ash—Phosphates, 1.712; Alkalies, .377; Water, 25.7; Total, 99.958.

In comparing the above analysis with that of the Extract of Malt of the German Pharmacopœia, as given by Hager, that has been so generally received by the profession, I find it substantially agree with that article.

Yours truly, SILAS H. DOUGLAS,
Professor of Analytical and Applied Chemistry.

This invaluable preparation is highly recommended by the medical profession, as a most effective therapeutic agent for the restoration of delicate and exhausted constitutions. It is very nutritious, being rich in both muscle and fat producing materials.

The very large proportion of *Diastase* renders it most effective in those forms of disease originating in *imperfect digestion of the starchy elements* of food.

A single dose of the Improved Trommer's Extract of Malt contains a larger quantity of the active properties of Malt than a pint of the best ale or porter; and, not having undergone fermentation, is absolutely free from alcohol and carbonic acid.

The dose for adults is from a dessert to a table-spoonful three times daily. It is best taken after meals, pure, or mixed with a glass of milk, or in water, wine, or any kind of spirituous liquor. Each bottle contains 1¼ lb. of the Extract.

Our preparations of Malt are for sale by Druggists generally throughout the United States and Canadas, at the following prices:

Extract of Malt, *with Hops (Plain)*	$1 [illegible]
" " " " *Pyrophosphate of Iron (Ferrated)*	1 [illegible]
" " " " *Cod-Liver Oil*	1 [illegible]
" " " " *Cod-Liver Oil and Iodide of Iron*	1 [illegible]
" " " " *Cod-Liver Oil and Phosphorus*	1 [illegible]
" " " " *Hypophosphites*	1 [illegible]
" " " " *Iodides*	1 [illegible]
" " " " *Alteratives*	1 [illegible]
" " " " *Citrate of Iron and Quinia*	1 [illegible]
" " " " *Pepsin*	1 [illegible]

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TROMMER EXTRACT OF MALT CO.,

FREMONT, OHIO.

BUFFALO LITHIA WATERS

As a Remedial Agent in Scarlet Fever.

Dr. James B. McCaw, *Professor of the Practice of Medicine in the Virginia Medical College at Richmond.*

[Extract from Proceedings of the Richmond Academy of Medicine, October 15, 1878, taken from the "Virginia Medical Monthly" of December, 1878.]

"Dr. McCaw also spoke of the great value of the Buffalo Lithia Waters in the management of SCARLET FEVER, AND IN ALBUMINURIA OF PREGNANT WOMEN."

ALBUMINURIA OF SCARLET FEVER.

Communication to the "Virginia Medical Monthly" for November, 1878, *by* Dr. C. W. P. Brock, *of Richmond, Va., a Member of the State Medical Society.*

"Richmond, Va., *September* 30, 1878.

"Mr. Editor:

"During the epidemic of Scarlet Fever which has been prevailing for a year in this city, and is yet scarcely ended, I have been giving my patients Buffalo Lithia Water *ad libitum*, and to the exclusion of all other water for drinking purposes. In no case since I have pursued this course have I seen even a trace of albumen in the urine of scarlatinal patients, either during the attack or the convalescence. With this experience in a number of cases, and hearing of favorable results in the practice of other physicians in this city who have used the same means, I have thought it worthy of note in your journal. If this result is *propter hoc*, we are enabled to rid Scarlet Fever of one of its most dangerous concomitants.

"There is scarcely any unusual taste to this water, hence it is not objectionable. Especially when ice is added, patients drink it with avidity.

"Very respectfully,

"C. W. P. BROCK, M.D."

Extract from a Letter of Dr. G. W. Semple, *a well-known Physician of Hampton, Va., Member of the State Medical Society.*

"I have had but one occasion to prescribe the BUFFALO LITHIA WATER IN SCARLET FEVER. In that case it promptly restored a healthy and abundant secretion of urine, when it was highly charged with ALBUMEN, and the secretion was almost suppressed. I have prescribed it with decided advantage in CHRONIC RHEUMATISM, and have known it to give relief in cases of RHEUMATIC GOUT, causing absorption of deposits of urates of soda. I have found it particularly valuable as a prophylactic in all of the many cases of NEPHRITIC COLIC (Gravel) in which I have prescribed it."

A Case stated by Dr. C. A. Bryce, *of Richmond, Va., Member of the State Medical Society, and Editor of the "Southern Clinic."*

"Richmond, Va., *January* 25, 1879.

"Dear Sir:

"I have just left off my visits to a boy who had GENERAL DROPSY FOLLOWING SCARLET FEVER. I put him upon BUFFALO LITHIA WATER, and in a week's time he was relieved. I consider this case, with others of the kind in this city, of sufficient value to establish the claim of BUFFALO LITHIA WATER in the treatment of the sequelæ of Scarlatina.

"Yours truly, C. A. BRYCE, M.D."

These Waters, in cases of six gallons, may be had at the Springs at $5.00 per case; or, of W. H. Schieffelin & Co., 170 William Street; Hegeman & Co., 203 Broadway; Caswell, Hazard & Co., cor. 5th Avenue and 24th Street, New York City, at $6.00 per case. Springs Pamphlet sent to any address.

THOS. F. GOODE, Proprietor, Buffalo Lithia Springs, Va.

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practice, and am much pleased with the results obtained.

"T. P. SATTERWHITE, M.

"JACKSON, MICH., *October*, 187

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tions of aged persons, I have learned to rely on MALTINE, nor in any instance have I
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By R. Ogden Doremus, M. D., LL. D.,

Professor of Chemistry and Toxicology, Bellevue Hospital Medical College; Professor of Chemistry and Physics, College of the City of New York.

New York, *April* 17, 1879.

I have visited the works at Cresskill, on the Hudson, where Maltine is prepared, and spent portions of two days in witnessing the chemical processes for making the same. I was particularly impressed with the thorough cleanliness observed, as well as with the completeness of the apparatus employed for accomplishing the desired result—from the first treatment of the grains to the concentration of the liquid product by evaporation *in vacuo.* The operation is effective in extracting the whole of the nutritive constituents of the grains of malted Barley, Wheat, and Oats, with but a slight residue, and is the most complete method yet devised, with which I am acquainted, for accomplishing this object.

Maltine is superior in therapeutic and nutritive value to any Extract of Malt made from Barley alone, or to any other preparation of any one variety of grain. From a chemical and medical standpoint, I can not commend too highly to my professional brethren this unique and compact variety of vegetable diet and remedial agent, nutritive to every tissue of the body, from bone to brain.

Respectfully,

R. OGDEN DOREMUS.

By Professor John Attfield, F. C. S.,

Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain; author of a Manual of General Medical and Pharmaceutical Chemistry.

London, 17 Bloomsbury Square, W. C.,
October 28, 1878.

To Messrs. Reed & Carnrick:

Gentlemen: I have analyzed the extract of malted Wheat, malted Oats, and malted Barley, which you term Maltine. I have also prepared, myself, some extract from these three malted cereals, and have similarly analyzed it, and may state at once that it corresponds in every respect with the Maltine made by myself. As regards the various Malt Extracts in the market, I may remark that your Maltine belongs to the non-alcoholic class, and is far richer, not only in the directly nutritious materials, but in the farina-digesting Diastase. In comparison, your Maltine is about ten times as valuable, as a flesh-former; from five to ten times as valuable, as a heat-producer; and at least five times as valuable, as a starch-digesting agent. It contains, unimpaired and in a highly concentrated form, the whole of the valuable materials which it is possible to extract from either malted Wheat, malted Oats, or malted Barley.

Yours faithfully,

JOHN ATTFIELD.

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The scarcity and high prices of Cinchona barks and Sulphate of Quinia, and the prospect of only a slight reduction in these prices, make the present a favorable opportunity of calling the attention of the profession to the *combination of all the bark alkaloids*.

Much attention has been given to this subject in Europe and India.

The growing appreciation by the medical profession of the United States of

CINCHO-QUININE

is due to the fact that it retains the important alkaloids IN COMBINATION—a combination which in practice is *preferable to perfect isolation or separation* of these alkaloids.

In addition to its superior efficacy as a tonic and anti-periodic, it has the following advantages, which greatly increase its value to physicians:

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2. It has the great advantage of being *nearly tasteless*. The bitter is very slight, and not unpleasant to the most sensitive, delicate woman or child.
3. It is *less costly;* the price will fluctuate with the rise and fall of barks, but will always be much less than the Sulphate of Quinine.
4. It meets indications not met by that Salt.

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"I have tested CINCHO-QUININE, and have found it to contain *quinine*, *quinidine*, *cinchonine*, *cinchonidine*. F. A. GENTH,
"*Professor of Chemistry and Mineralogy*."

"LABORATORY OF THE UNIVERSITY OF CHICAGO, *February* 1, 1875.

"I hereby certify that I have made a chemical examination of the contents of a bottle of CINCHO-QUININE; and by direction I made a qualitative examination for *quinine*, *quinidine*, and *cinchonine*, and hereby certify that I found these alkaloids in CINCHO-QUININE.
"C. GILBERT WHEELER,
"*Professor of Chemistry*."

"I have made a careful analysis of the contents of a bottle of your CINCHO-QUININE, and find it to contain *quinine*, *quinidine*, *cinchonine*, and *cinchonidine*.
"S. P. SHARPLES,
"*State Assayer of Massachusetts*."

TESTIMONIALS.

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"I have used CINCHO-QUININE, and can say without any hesitation it has proved superior to the sulphate of quinine.
"J. G. JOHNSON, M. D."

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"DR. E. R. DOUGLASS."

"LIVERPOOL, PA., *June* 1, 1876.

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"DR. I. C. BARLOTT."

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"W. H. HALBERT."

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"I regard it as one of the most valuable additions ever made to our materia medica.
"GEORGE C. PITZER, M. D."

"RICHMOND, VA., *March* 26, 1877.

"I believe that the *combination* of the several cinchona alkaloids is more generally useful in practice than the sulphate of quinine uncombined. Yours truly.
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"*Member Virginia State Board of Health, and Secretary and Treasurer Medical Society of Virginia*."

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"In typhoid and typhus fevers I always prescribe the CINCHO-QUININE in conjunction with other appropriate medicines, the result being as favorable as with former cases when the sulphate had been used.
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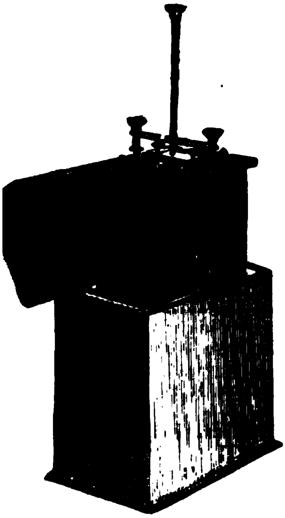

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ART. I.—*Carcinoma of the Stomach.* From the "Treatise on the Practice of Medicine," of Professor ROBERTS BARTHOLOW, M. D.*

Etiology.—The points of election for the development of cancer in the intestinal canal, named in the order of their relative frequency, are the stomach, the rectum, the cæcum, the flexures of the colon. Of all the organs of the body, the stomach is most frequently the seat of cancer—more frequently than the uterus, which comes, strictly, next. As regards age, the majority of cases occur at fifty, but the disease may appear at any time from forty-five to sixty. It is very rare from thirty to forty. According to some authorities, cancer attacks the male sex by preference, but careful investigation shows that this view is erroneous, and that the two sexes are about equally affected. The well-to-do classes are said to be more liable to the disease than the poor, and the obese, hearty feeders, rather than the abstemious, but these are doubtful propositions.

Predisposition and heredity play an important part in the causation of cancer; they are, doubtless, the most influential factors. The inherited tendency may not be traced sometimes, when it exists, because of the behavior of the cancer germ, skipping over one or more generations and appearing in subsequent ones. All other presumed moral and dietetic causes are rather fanciful.

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* Announced as preparing for early publication by D. Appleton & Co.

Pathological Anatomy.—The forms of cancer occurring in the stomach are the following: scirrhus, or fibroid; medullary, or encephaloid; and the gelatinous, or colloid. As regards the site, the points of election are in 60 per cent. at the pylorus; in 20 per cent. at the lesser curvature; and in 10 per cent. at the cardia. In the process of growth, extension is more apt to be vertical than transverse; but when the growth is about the cardia or the pylorus, the new formation takes an annular direction, causing stenosis.

The initial change in the development of cancer of the stomach is an increased vascularity and the presence of numerous white blood corpuscles in the cylindrical epithelium of the gastric glands—as in ordinary inflammation—but the changes soon take a special direction and character. Rapid proliferation of the cells of the cylindrical epithelium occurs, and assumes a downward direction, penetrating the mucosa, the sub-mucosa, to the muscular layer, into which ultimately long fibrous bands project. In the loose sub-mucous connective tissue the growth is most rapid, and here the nodules form in greatest numbers. The so-called cancer cells—groups of proliferating cylindrical epithelial cells—lie imbedded in a fibrous stroma, made up from the connective tissue of the mucous membrane. Within and about the stroma an infiltration of small cells appears, and out of or within these are formed numerous minute vessels. Thus, in a short time from the beginning of the process, all of the anatomical elements of the mucous membrane are appropriated by the new formation. In the course of development of scirrhus the connective tissue element, the fibrous stroma, takes on a preponderating growth over the epithelium cells and the small cell infiltration, with its newly formed vessels.* It is in consequence of this preponderance of the connective tissue element, whether in distinct nodules or in a dense annular mass, that it presents such a cartilaginous appearance on section. A large part of the stomach may be converted into a mass of scirrhus, of one or two inches in thickness, with nodules and protuberances of greater thickness projecting into the cavity. A dense mass, of half to an inch in thickness, much less nodular, may surround the pylorus or the cardia, leaving a considerable part of the mucous membrane of the stomach free from disease. No part of the mucosa exists after the cancer is developed; hence the internal surface of the stomach at that point is the surface of the cancer only, which is usually in an ulcerating state.

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* Waldeyer, Virchow's "Archiv.," vol. xli., p. 470, and vol. lv., p. 6[illegible]. "Die Entwickelung der Carcinome." Also Förster, "Lehrbuch der Path. Anat.," pp. 110–115, by Siebert, Jena, 1878. Rindfleisch, "Text-Book of

Medullary cancer, or encephaloid, differs from scirrhus in the less growth of the fibrous stroma and in a much more luxuriant proliferation of the small cells and their associated vessels. Hence this form of the disease is softer, more vascular, and possessed of a greater power of rapid growth. Some parts of this form of cancer may, and usually do, retain the characteristic fibrous stroma of scirrhus. The internal or gastric surface usually consists of projecting nodules of softened cancer elements, which are easily detached and bleed readily. The ulceration which occurs in the exposed surface within the cavity of the stomach, really consists in a process of fatty degeneration, the disintegration being produced by the solvent action of the gastric juice and the mechanical action of the food.

Colloid cancer differs from the other varieties in that a gelatiniform degeneration of the cancer cells takes place, giving the peculiar colloid appearance. The distension of the alveoli by this material dilates them so that they are larger than in other forms. This variety differs from the others also in that it is more widely diffused through the mucous membrane, and through neighboring organs, and is slower and longer in growth. It is also less common.

Pathological Histology," Lindsay & Blakiston, 1872, p. 375, confirms Waldeyer's account of the origin of cancer in the mucosa. See also Rokitansky, and especially the great work of Cruveilhier, "Traité d'Anat. Path.," where colloid will be found admirably delineated.

Cancer, like ulcer, by setting up local peritonitis, leads to the formation of adhesions, which affect the shape, position, and motions of the stomach. Adhesions may fix the pylorus in or about its true position, but when unattached, the weight of the cancerous mass may drag it down, even as low as the hypochondrium, and thus constitute a movable tumor. When the annular deposits form at the pylorus, a stenosis of the orifice and dilatation of the cavity are results. When the same formation occurs at the cardia, the stomach very much contracts, and the œsophagus immediately above dilates. In the vicinage of the connective tissue bands, which stretch out through the subjacent elements, especially the muscular considerable hypertrophy of these muscular elements at first results, but atrophy, from pressure of the newly formed connective tissue, finally occurs.* Those portions of the mucous membrane uninvaded by the cancer elements suffer chronic catarrh, in consequence, doubtless, of the continued hyperæmia. That from such a state of the mucous membrane cancer may develop, is a popular notion, not supported by any scientific data. It is true that hyperæmia of the cells of the cylindrical epithelium is apparently the starting point of the development of cancer, but this hyperæmia is due to some peculiar irritation in the tissue. Cancer has developed from an old ulcer, in some rare instances, but some remnant of gland tissue must have remained.

Cancer of the stomach is usually primary, and in most of the cases is confined to that organ. It is rare, indeed, for the stomach to be secondarily affected; but the author has seen a case in which cancer of the gall-bladder was followed by secondary deposits in the pylorus—an altogether unique case. In less than half the cases, cancer involves other organs as well as the stomach, and notably the liver, which is affected in about one fourth. Secondary deposits in the liver less often occur when the cardia is involved than when the lesser curvature and the pylorus are the sites of cancer.

The principal complications of cancer of the stomach are fatty heart, thromboses, pneumonia, tuberculosis, etc.

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* Luton, "Cancer de L'Estomac," "Nouveau Dict. de Méd.," Par 1871.

Symptoms.—In a few rare cases cancer has proceeded from its inception to its termination in the death of the patient without causing any distinctive symptoms. These are examples of cancerous infiltration of the mucous membrane in the greater curvature, the orifices being unaffected. In the first stage, before a tumor can be detected or the cachexia is evident, the symptoms present are those of a dyspepsia, which gradually assumes a more aggravated character. There is a good deal of pain from an early period, felt in the epigastrium usually, and increased by pressure, by food, and is also felt posteriorly. The pain is nearly constant, and, although at times more severe, there are not, as a rule, those violent paroxysmal attacks so often found in ulcer. The pain is acute, often burning, sometimes lancinating, but by no means invariably so; again, it is a sense of soreness and not severe pain; rarely it is entirely absent, according to Brinton, in 8 per cent.*

The disorders of digestion increase with the duration of the case; the appetite declines; distress after eating becomes greater; then attacks of acidity and pyrosis, with regurgitation of an acrid, acid liquid, come on. Emaciation and loss of weight proceed at a uniform ratio. If annular deposits have been occurring at the cardia, the patient early becomes conscious of a difficulty in getting food into the stomach, but he almost invariably refers the obstruction to a point higher up. As the case advances, the alimentary substances pass slowly down to the cardia, where they are arrested for a minute or more, some portions trickling through into the stomach, the rest slowly returned by regurgitation, with a distinct gurgling noise. Considerable pain is experienced—a burning pain usually—when the substances swallowed reach the cardia, and as they pass through it into the cavity. This passage through the narrowed orifice is, as a rule, distinctly recognized and accurately described. When the liquid or solid is disposed of, either by regurgitation or by entrance into the stomach, there is a feeling of relief, and the stomach digestion goes on with the ordinary facility. In cancer of the cardia, but a small portion of the mucous membrane is destroyed—the deposits being annular—and as death takes place earlier by inanition than in any other form, there is not much interference with digestion, and these unfortunates suffer horribly from hunger. The epigastrium contracts, and is drawn in toward the spine, owing partly to the exceeding general emaciation, and partly to the extreme contraction of the stomach.

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* "Medico-Chirurgical Review," vol. xx., p. 479. Also Brinton on "Diseases of the Stomach."

In the other forms of cancer, instead of arrest at the cardia, the patient feels no distress until the alimentary materials reach the stomach, when nausea and other distresses begin. Vomiting is one of the most constant symptoms, occurring in three fourths of the cases. At first the patient brings up in the morning, with a good deal of straining, some tough, glairy mucus, and, it may be, a little bilious matter. Presently the vomiting comes on after eating; if the cancer is situated just below the cardiac orifice, and does not constrict it, pain, nausea, and vomiting begin almost immediately after the food is swallowed. If the posterior wall is affected only, vomiting may not occur until late in the disease, and then may not be a very pronounced symptom. When the pylorus is affected, vomiting is a pretty nearly constant symptom, but it does not occur until some time after the food has reached the stomach—as a rule, not until two or three hours have elapsed. The vomited matters consist at first of the food in various stages of solution, then of mucus, containing sarcina and other minute organisms, and when the case is pretty well advanced there appear small brownish or brownish-black or chocolate-colored masses, of small size usually, which consist of decomposed blood. Vomiting ultimately occurs without the presence of food: it is then the form of vomiting entitled *vomiting of irritation*. Hæmatemesis is a frequent but not a constant symptom, occurring in somewhat less than half the cases (42 in 100, according to Brinton). If, however, the vomited matters were carefully searched for altered blood, it would probably be found present in nearly all cases. If the sp troscope were employed to examine all suspicious looki g particles, the absorption bands between C and D, charact istic of hæmatin, would be often seen. Vomiting of blood n large quantity, as occurs in ulcer, is quite exceptional in cancer. Usually the blood is derived from small capillaries, but now and then sloughing takes place, and a vessel of considerable size is opened. The author has observed in some cases an enormous quantity of chocolate-colored, homogeneous, granular material, discharged both by vomit and by stool, in cases of cancer at the pylorus. The condition of the bowel is that of torpor, but toward the end ichorous matter passing down the intestine excites diarrhœa.

In one third of the cases observed by the author, salivation (not mercurial) was a symptom, and was either constantly or periodically present. The saliva had the ordinary appearance. The tongue is red at the tip and pointed, and is usually glazed.

The cachexia induced by cancer is characteristic. With the progress of emaciation, decline of strength is to be expected, but the subjects of the cancerous cachexia have an extraordinary sense of fatigue, which is felt when no exertion is made. The action of the heart is feeble, the pulse small, weak, and quick; the respiration somewhat hurried. The least exertion increases the number of the heart-beats and the respiration movements. The skin is thin, dry, harsh, and inelastic. The complexion is pallid, earthy, and bronzed, combined—a fawn color—and is strongly suggestive of the malady. Toward the end, œdema of the ankles appears—a mechanical result of the thromboses. The cachexia, though it may be late, never fails to come on.

A tumor is found in the proportion of eighty to one hundred cases. In some situations the tumor can not be felt, as when at the cardia, or in the lesser curvature, for here they are covered in by the left lobe of the liver. In other situations they may usually be detected by palpation—suitable attention being given to all the sources of error. The variety of cancer does not necessarily affect the question of a tumor; but a colloid growth may be diffused through the walls of the stomach, giving to the sense of touch the impression of thickening, and not of a defined tumor. On palpation, the tumor, if it exist, is felt to be hard, somewhat irregular, and nodular, if scirrhus, but softer and more elastic, yet well defined, if encephaloid or colloid. Even when in a position to be felt, it may elude search by reason of distension of the stomach, or of adhesions which may change the shape and position of the organ, or the presence of fluid in the peritoneal cavity—a result of the pressure of secondary déposits in the liver. Tumor of the liver, of the pancreas, movable kidney, aneurism, may be confounded with tumor of the stomach, and must be kept in view when making a diagnosis by exclusion. The relation of the tumor to the movements of the diaphragm should be noted; for a tumor of the stomach does not descend when the lung is inflated with air. When the pylorus remains free the weight of the neoplasm causes it to fall down, sometimes so low as the hypochondrium, and it continues movable. Tumors of the liver and spleen descend on full inspiration, but the pyloric tumor when adherent retains its position, and when movable is not influenced by the respiratory movements. When a scirrhus lies upon the aorta, a pulsation is communicated to it, but it is not an expansile pulsation, and there are none of the other signs of aneurism, yet mistakes of diagnosis are not infrequent.

Like ulcer, cancer may result in perforation and general peritonitis; in the formation of fistulous communications with the walls of the abdomen, externally, with the transverse colon, when there will be stercoraceous vomiting; with the thoracic cavity; but these are comparatively rare complications. Occasionally a large vessel is laid open, and death ensues from sudden and large hæmorrhage. In accordance with its nature, cancer tends to spread to contiguous parts, by reason of immediate vascular communication. The cancer elements are much more frequently deposited in the liver than in any other organ. Ascites, icterus, thrombosis of the portal vein, etc., are the most important results of the implication of the liver. Extension of the disease also occurs by the lymphatics, and large nodular masses of degenerating mesenteric glands may be felt through the thin parietes of the abdomen during the life of the patient. The cervical lymphatics, just above the clavicle, also sometimes enlarge, and afford valuable indications of the nature of the malady, even early in the course of the disease.

Tuberculosis of the lungs is a frequent complication of cancer of the stomach.*

Course and Duration.—Cancer of the stomach is an essentially chronic disease. The average duration, according to Brinton, is one year; but the cases differ in duration according to the anatomical site. Named in the order of their fatality, they stand as follows: cancer of the cardia, of the pylorus, of the lesser curvature, of the greater curvature. The maximum duration is three years.

Diagnosis.—The differentiation is to be made between chronic gastric catarrh, chronic ulcer, and carcinoma. In the early stages of ulcer and cancer it may be impossible to separate them from chronic gastric catarrh; but as these cases progress the points of difference become distinct. The following considerations will enable a correct differentiation to be arrived at: chronic gastritis may occur at any age; there is rarely any severe pain, and it is diffused over the whole organ; vomiting is only occasional, and then of alimentary matters, as a rule; there is no important variation in the body weight, and no progressive emaciation. In ulcer, the pain is severe, localized to a small point in front and behind; there is much vomiting and hæmatemesis, the blood coming up in considerable quantity, little or not at all altered. The subject of cancer is well advanced in life (from forty to sixty); the pain has a lancinating character, and is felt in one place which is the same for each case, but differs in different cases; there is vomiting, especially vomiting of chocolate or coffee-ground masses of decomposed blood; above all the presence of a tumor.

Treatment.—Although cancer of the stomach is incurable, much may be done by treatment to render the patient's decline tolerable. The first and most important point is to regulate the diet. By the withdrawal of solid food, and the substitution of milk alone, or milk and beef-juice, the greatest relief is afforded, and for a time there may be a gain in weight, but of course this is not long maintained. If the diet is restricted to the articles mentioned, it should be supplemented by that important means of rectal alimentation, the injection of defibrinated blood. The burning pain is much diminished by washing out the stomach once a day with the stomach-pump, especially in dilatation from stenosis of the pylorus. By removing acrid and acid matters in this way, much straining efforts at vomiting will be saved.

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* As respects the symptoms, the following works on the stomach, Brinton, Fox ("Reynolds's System of Medicine"), Habershon, and Budd, may be consulted with advantage.

Of all the remedial measures proposed there is no prescription which is so generally useful in these cases as equal parts of pure carbolic acid and tincture of iodine, of which one or two drops may be administered in water three times a day. For the vomiting only, a solution in cherry-laurel water of carbolic acid, or a combination of carbolic acid with bismuth in an emulsion, will be found effective. Nitro-glycerine, benzine, and bisulphate of carbon have been used, with advantage, to allay nausea and vomiting. The most effective means to allay pain is the hypodermatic injection of morphia. The stomachal administration of the same agent is inefficient, owing to the diminished absorption power of the organ. Laudanum by enema, morphia in the form of suppository, or the endermic use of morphia, are preferable to the stomach administration. Great care is necessary in the prescription of anodynes, for the need grows rapidly, and the consumption becomes enormous, reducing the patient to a mental and moral weakness dreadful to contemplate.

Arsenic, in the form of Fowler's solution, one or two drops, three times a day, has considerable power to allay pain, and is not without influence in retarding the growth of epithelial cancer. As respects the power to relieve pain, the physiological basis for its employment is the action of arsenic, in toxic doses, on the nervous system of animal life. It has been repeatedly observed that sometimes, in large doses, no vomiting was produced, but coma and insensibility followed. A great many facts have now been accumulated, proving that cancer of epithelial origin may be greatly retarded in its growth by the persistent use of moderate doses—two drops of Fowler's solution *ter in die*.

The author's considerable experience in the treatment of carcinoma of the stomach warrants the statement that the best results are obtained by the persistent use of carbolic acid and iodine, in the form advised above, and of arsenic, in the form of Fowler's solution. It may not be needless to observe that these agents should not be given in one prescription—the carbolic acid and iodine together, the Fowler's solution at another time.

Art. II.—*The Anatomical Uses of the Cat.* By Burt G. Wilder, M. D., Professor of Physiology, Comparative Anatomy, and Zoölogy in Cornell University, and of Physiology in the Medical School of Maine.

Two years ago * the writer endeavored to point out the extent to which the study of human anatomy may be aided by the previous examination of certain animals, especially Amphioxus, the frog, and the cat. The purpose of the present article is to show that not only general facts and ideas, but even an acquaintance with details of structure and methods of work, may be gained by the dissection of the last-named animal.

Some of the most important portions of human physiology have, as a basis, observations and experiments upon animals; and the acceptance of the results as applicable in the main to man involves a recognition of the essential identity of the structure, properties, and functions of our organs with those of animals.

But while physiologists openly acknowledge their indebtedness to dogs and frogs, rabbits and monkeys, their example seems to be lost upon their anatomical colleagues, who—in practice at least—admit that human anatomy can be taught and learned from the human cadaver alone.

To a certain extent this view is doubtless correct. Far be it from me to suggest that doctors should confine their anatomical researches to rats, like the Chinese, or even to monkeys, as has been reported of Galen. Almost equally loth should I be to witness the adoption of a recent proposition that anatomy should be taught by means of models and diagrams, dispensing altogether with actual dissection. But, in view of certain obvious and considerable difficulties which attend the pursuit of practical anatomy upon the human body, it may be worth while to inquire whether a portion of the necessary knowledge may not be gained from the lower animals, and thus serve as a foundation for that which the human subject alone can supply.

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* In an article entitled "Should Comparative Anatomy be included in a Medical Course?" published in this Journal for October, 1877.

Few members of the medical profession now believe that between the bodies of man and the lower animals is fixed a gulf great and impassable; few probably think that the structural differences are commensurate with the unlikeness of form and habit of life; most have doubtless learned that man is certainly a vertebrate and a mammal, and are ready to admit that while as to his spirit he may be "only a little lower than the angels," as to his body he is "only a little higher than the monkey." Nevertheless I apprehend that many physicians are somewhat startled when first they learn, from actual dissection, how slight are the differences between a cat and a man. Not only has the former a head, a neck, a trunk, and two pairs of limbs with similar bones, muscles, and joints, but also the chest, abdomen, and pelvis contain the same organs similarly arranged. The heart inclines a little toward the left, while the liver lies more upon the right; in fact, one is rather surprised than confused to find the left kidney farther from the head instead of the right, as in man. Examine the arm or front leg: here are shoulder-blade and collar-bone, humerus, ulna and radius, carpals, metacarpals, and phalanges. Among the muscles we easily recognize the *latissimus*, *teres major* and *teres minor*, the *supra-* and *infra-spinatus* and *subscapularis*, the *biceps* and *triceps*, the *brachialis* and *supinator longus*. The brain presents all the primary divisions, and some of the fissures of the hemispheres are homologous with those of man. Even the roots, trunks, and principal branches of the perplexing cranial nerves may be easily identified in the cat.

Since, however, with more or less qualification, the same may be said of many other mammals, it is proper to explain why the cat is selected rather than the dog, rabbit, rat, pig, sheep, or monkey. Were monkeys obtainable at a moderate cost, they would be admirably fitted for preliminary anatomical work, and the student should lose no opportunity for their dissection.* Sheep and pigs are inconveniently large and costly. Rats are as inconveniently small and are not easy to obtain unmutilated. Dogs vary in size and to some extent in structure, so that strict comparisons with man are difficult. The rabbit is eligible as to size; it is easy to keep and to rear; but its structure, like that of the sheep and pig, much less closely resembles that of man than does that of the cat; there are no cerebral convolutions, or canine teeth; the digestive organs are more strictly herbivorous, and the muscles are less easily homologized with those of man.

Let it not be thought that the idea of making the cat subservient to human anatomy is here claimed as original. Nearly twenty years ago, the late Professor Jeffries Wyman, in commenting upon the unsatisfactory nature of some notes of dissections, said: "Much of this is due to the lack of suitable standards for comparison. The human body is not a suitable standard for the lower vertebrates. The best thing any anatomist can do is to prepare complete accounts of the structure of a few forms, each typical of some large group. The fowl could represent the birds, and the cat the mammals. The cat's anatomy should be done first, because it would also serve as an introduction to human anatomy, and thus become an important aid to medical education."

Now Wyman was not only the highest anatomical authority in America; he was also noted for judicial impartiality, and for caution in the adoption and expression of new ideas. He had been professor of anatomy in a medical school; and, at the time of the conversation above alluded to, was teaching anatomy to medical students. I have been unable to find in his published works any reference to this use of cats, but he may have made the same remark to others, and all his students must share my regret that so few of the wise things said in his laboratory ever found their way into print.

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*The same suggestion is made respecting still-born children, which can sometimes be obtained for anatomical purposes.

Let me now state more distinctly the thesis which will be supported in the present article: *Under existing circumstances, the earlier dissections of the human anatomist may be made upon the cat more advantageously than upon the human body. Felotomy should be the stepping-stone to anthropotomy.*

The subject may be naturally considered under the following heads:

A. The scope and requirements of human anatomy.

B. The present conditions of its study.

C. The advantages of using the cat as a subject of dissection.

D. The disadvantages of so doing.

E. Conclusions.

A.—*The scope and requirements of human anatomy.*—The study of what may be seen with the unaided eye is called *gross* or *macroscopic* anatomy. *Fine* or *microscopic* anatomy or *histology* is the study of tissues. *Surgical* anatomy concerns chiefly the relative position of parts which are commonly subject to operation; *physiological* anatomy includes the cellular structure of all organs, and the position and nature of the viscera more especially. Each of these kinds of anatomy has its peculiar methods and instruments, and their employment is not materially facilitated by the occupations of ordinary life. The good whittler is not necessarily an expert dissector. Working with the microscope implies something more than shutting one eye and looking through a brass tube. Familiarity with a garden-engine is no assurance of ability to make a "fine injection," and the youth who has helped to make pickles and preserves finds his skill to avail him little for the permanent preparation of a delicate embryo or brain.

An important part of anatomy is the knowledge of the *position* of the *viscera* relatively to each other, and to the surface of the body. This knowledge does not come by nature. Perhaps no one, in thought, has ever located his brain elsewhere than in his head, but most physicians have been appalled at the serious displacements of other vital organs implied in the words or gestures of apparently intelligent patients.

Sooner or later—in fact, the sooner the better—the student must learn for himself, and by actual observation, the *essential characters* of the *tissues;* he must be able, from a fragment invisible to the naked eye, to determine whether it be nerve or muscle, blood of bird or of quadruped. Every skilled observer recalls the time when he mistook air-bubbles for cells of great beauty, adventitious threads for peculiar fibers, and infusoria for ciliated epithelium.

There is a *language* peculiar to anatomy, and it is often too literally "all Greek" to the beginner. Of course the new terms may be committed to memory as arbitrary sounds, but the advantage of associating words with visible and tangible objects has always been so far recognized that the first desire of the embryo anatomist is for a skeleton. Here, however, the "object-teaching" usually halts until he begins to attend lectures, and then new names and new things are presented with a rapidity and lack of connection which would make Froebel's hair stand on end.

The anatomist usually is, and the doctor always should be, a *teacher.* The scientific article, the public lecture, and the explanation to anxious patients and friends, all require for their fullest usefulness the ability to describe with ease, and to draw correctly at least an outline diagram. He who can not do these things may justly blame the teachers who failed to impress their importance upon him.

Finally, like all other sciences, anatomy demands *absolute accuracy.* The artist and the novelist may be justified in representing the probable—or even the merely possible—in place of the actual; but the anatomist must either limit himself to what he sees, or draw a sharp line between what he knows and what he merely infers. Incompleteness is rarely avoidable, and always excusable—unless completeness is claimed—but falsification is one of the unpardonable sins. The "whole truth" may be unattainable, but nothing more than the truth should be admitted.

B.—*The present conditions of the study of human anatomy.*

To begin with, a human subject is *rarely obtainable outside of the medical schools.* Hence, excepting the skeleton, which alone is dreary as a fireless grate, the student is confined to books. This is bad enough for one who intends to enter a medical school, and who desires to fit himself to appreciate the lectures; the case of the unprofessional seeker after anatomical truth is usually still less favorable.

The human subject is inconveniently large. Supposing all difficulties of procuring it to have been surmounted, the student has almost "an elephant on his hands." Handling and transportation are either difficult or expensive, or both; and the very table for dissection, if of the orthodox pattern, is as little adapted to any other purpose as is a coffin or a hearse. The student must stand much of the time, and is thereby partly incapacitated for close observation, for quiet reflection, for careful drawing or description. These desirable operations are further hindered by the proximity of those who, on account of the size and cost of the subject, are usually dissecting at the same time. The amount of offal to be removed is considerable, and its character would hardly justify resort to the expedient practiced with the bodies of dogs used at the laboratory in one of our large cities, viz., tying them to the rear of outgoing freight-trains.

The human subject is *expensive*. This is the natural consequence of the fact stated by Dr. Keen,* that "in this country the supply of subjects never equals the demand." In Vienna a body may be had for fifty cents; but at some country schools it may cost nearly as many dollars. The usual expense—even when divided among several dissectors—is inconveniently large for many students, and especially for the juniors, in consideration of what is learned from a first dissection. Indeed, medicine is unique among all civilized arts in placing the costliest material in the hands of the beginner. What would we doctors think of carpenters and tailors whose journeymen were recommended to learn their trades upon rosewood and cloth of gold?

The human subject is almost always *offensive*. Between death and dissection the interval is rarely less than three days, and may be a fortnight. In the case of a body clandestinely obtained, by the time it reaches the consumer—perhaps in a distant city, the stolen fruit is far from sweet. Before the dissection is completed, notwithstanding the use of various preservatives, the subject is commonly a most "unpleasant body."

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* "Sketch of the Early History of Practical Anatomy," 1874, p.

To conceal the sickening emanations the average student it apt to *smoke.* Indeed, the preparation for the study of medicine seems often to be confined to the establishment of a tolerance of nicotine. This is not the occasion for a discussion of the tobacco question, but there are some aspects of it which the medical student may well consider. In the first place, tobacco smoke merely disguises the odors of putrefaction; it neither destroys them nor prevents their possible bad effects. In the second place, to some of the students, the "remedy may be worse than the disease." Again, to be efficacious, the smoking should be almost continual, consequently excessive, and probably more or less deleterious. Finally, the habit so indulged in the dissecting room is apt to persist after graduation, and the odor from a smoker's clothes may seriously affect women and children when ill, and even prevent the physician's employment in the families of gentlemen who do not use tobacco.*

Whatever may be thought upon this point, it is evident that any knowledge or dexterity acquired before commencing human dissection would enable the student to work more rapidly, and so reduce the time during which the subject must be kept at the risk of putrefaction. Dissection wounds are now so seldom dangerous that it is only necessary to say that their frequency would be diminished by practice upon fresh and innocuous animals.

Lastly, the human subject is rarely available for the study of *viscera.* Usually some of the viscera are diseased. The heart is apt to be full of injection mass. The brain and abdominal viscera decay so rapidly that some of their important features are soon obliterated; and when, as is customary, their removal is postponed until after the examination of the overlying muscles, their condition is often such as to render them unfit for preservation. How many students have gained a good view of the thoracic duct, or the sympathetic ganglia? How often has it been ascertained whether a subject has two pancreatic ducts or only one?* Is a satisfactory examination of the brain made by the majority of dissectors?

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*Upon this practical matter the following remark was made by Rev. Howard Crosby in his address before the graduating class at the Medical Department of the University of the City of New York, February 18, 1879. "A man whose clothes are saturated with stale tobacco is not an agreeable visitor in a sick room. Nor is it reviving to a delicate organization to have stimulants applied through the physician's breath."

This neglect of the viscera, apparently unavoidable with the human subject under ordinary circumstances, is partly the effect, and partly also the cause, of that predilection for surgery which prevails among medical students. Nine out of ten at some stage of their course cherish aspirations for distinction as brilliant operators; but perhaps an equally large majority are destined to become general practitioners, and would better have given more time to the tissues and the viscera. The students, however, are not altogether responsible for this; judging from the time and space given to the viscera in lecture-courses and text-books, it is doubtful whether the value of physiological anatomy is sufficiently recognized by those to whom students look for guidance and instruction.

C.—We are now prepared to consider *the advantages presented by the cat as a subject of preliminary dissection.*

Cats are *abundant* and *cheap.* They may usually be had for the asking, or for a few cents; tender-hearted possessors of superfluous animals have even been ready to pay for their removal, and to the homeless cat a speedy and painless death is a real mercy. Cats may be killed by drowning, or by a few cents' worth of chloroform, or, after partial anæsthesia, by cutting the medulla. Storage and handling are easy, and transportation is rarely required.† Materials for injection, even the finest, cost very little with so small an animal. In short, the poorest student may dissect all the cats he requires.

The *size* of the cat is convenient. Aside from mere ease of handling, and the smallness of the table required, the dissector may usually sit while at work, and thus be more favorably placed for close observation, for reflection, for drawing or describing, and for the examination of books or specimens.

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*See a paper by S. H. Gage in "The American Quarterly Journal of Microscopical Science," for January, 1879.

† At the time of this writing, a crate of five live cats has just arrived by express from a neighboring town.

Fresh material may always be had. Cats may be kept alive until needed. Contrary to popular belief, imprisoned cats, if properly fed and cared for, rarely quarrel, and usually seem contented. A dozen individuals of all ages, both sexes, and various social degrees, have lived, eaten, and slept together in quiet and apparent harmony.

There need be *no offensive odors.* By examining the muscles of the chest and abdomen upon one cat, and the viscera upon another, the latter may always be had while fresh; and by using several specimens the muscles need never be allowed to decompose.

The entire cat may be easily and cheaply *preserved in alcohol.* I say alcohol, because it is not only the surest preservative, but the most expensive; hence with cheaper liquids the case is still stronger.

The cost and size of a human subject compel the student to confine himself to a single "part," to dissect more promptly and continually than is sometimes convenient, and often more rapidly than is consistent with entire thoroughness. It may be fairly questioned, however, whether the cost of the unnecessary and perhaps injurious tobacco and alcoholics consumed by some students during their medical course would not enable them to put an entire subject into spirit; it would certainly suffice for the preservation of the head, hands, feet, and certain viscera which require more time than other parts. Now, four litres (about one gallon) of alcohol will fully preserve a cat; and it may often be cheaper to kill the animal at once and put it into spirits than to keep it alive for any considerable time Once preserved it may be dissected at any time, and the work may be indefinitely prolonged. The parts are firmer and more easily traced than when fresh; permanent preparations may be made if desired, and there is abundant leisure for drawings and descriptions. Moreover, by the use of alcohol the student is able to dissect the whole of the same individual; he may examine the right side directly after the left, and thus not only work more rapidly, but also correct his errors and confirm his notes of peculiarities.

From the cat we may always obtain the *tissues* in a normal condition. The difficulty of getting human organs in a perfectly fresh and healthy state has long been admitted practically by histologists. We have now simply to formulate our recognition of the fact, and of its special importance to beginners in microscopic anatomy.

The cat offers especial facilities for the careful study of the *brain* and other *viscera.* This follows from what has been said of the ease with which it may be either obtained fresh or preserved in alcohol. The late Professor Agassiz used to say that alcohol is almost indispensable for the proper investigation of soft parts; and it is to his wise foresight and self-sacrificing efforts that museums and incorporated institutions of learning are authorized to obtain alcohol free of tax for preservative purposes.

Frozen sections of the cat may be made easily, and in all directions, so as to display the relative positions of the vessels and viscera as a preliminary to their examination in the human subject. The sections so made may be preserved as permanent preparations more easily and cheaply than those of the human body.*

D.—There are some *disadvantages in using the cat as a subject of a preliminary dissection.*

Some of the organs are *inconveniently small.* Such as the heart and the eye, parts of the brain and urogenital organs. The beginner may do well to first examine these parts from a sheep or ox; but it may be worth while to recall the advice of Cuvier to a young medical student who ventured to tell him that he had discovered something new and remarkable in a human body. Cuvier replied: "Go and anatomise an insect, the largest you can find; then reconsider your observation, and if it still appears to you to be correct I will believe you on your word." After making the dissection the student confessed that he had been in error.

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* A series of such sections was shown at the recent meeting of the American Association for the Advancement of Science, in Saratog

Some parts of the cat are apparently *more complex* than the corresponding parts of man. For instance the muscles called *deltoid*, *trapezius*, and *pectoralis major* are single in man, but in the cat each consists of at least three divisions, which differ as to origin, course, insertion, and function. Those who may have adopted the idea that man is not only higher as a whole than animals, but also more complicated as to all his parts, are advised to compare the human brain and stomach with those of a pig, sheep, or porpoise.

Some portions of the cat have not yet been shown to correspond to human structures. This is true of certain cerebral fissures, and of some muscles, especially in the hinder leg. We have simply to await the result of further investigation, but are not debarred from making use of the parts already understood.

The cat is not especially adapted to *experimentation*, as well remarked by Mr. Williams*: "its strength, agility, and ferocity, when tormented, will serve as checks upon any torture under vivisection which a weaker or more timid animal might be forced to suffer under the knife of the too eager investigator." This I would qualify by saying that the investigator can never be too eager, but he may be too unfeeling or too presumptuous. Nearly all merely illustrative experiments may be performed upon animals rendered unconscious either by anæsthetics or by cutting the medulla. The number of those who are qualified to make demonstrative experiments involving severe or continued pain is very small indeed. Let no felotomical laboratory be described as Maisons-Alfort has been by Hamerton, "a hell of horses punished for no sin."

There is no manual for the dissection of cats similar to the works on human anatomy, and the "dissectors' guides." This is somewhat strange, considering how easily cats can be obtained and examined. In the "Leçons" of Cuvier, and some other compendiums of comparative anatomy, the organs of the cat are referred to in connection with those of the other felines. Martin's "Das Leben der Hauskatze" treats mainly of habits, and but briefly of structure. Krause's "Monograph" is of the rabbit, and the somewhat too brief directions in the excellent "Practical Physiology" of Foster and Langley refer to the rabbit and the dog. Straus-Durckheim's magnificent "Anatomie du Chat" includes only the bones, ligaments, and muscles; its size and cost—indeed, its very fullness—unfit it for the student who aims at human anatomy as an end; and there is no evidence that the author had in mind the advancement of medical education in the preparation of this, the crowning work of his life. Mr. H. S. Williams has published* the outline plates of Straus-Durckheim, copied and reduced one third by photo-lithography, and in his "Explanatory Index" has given some excellent reasons for the dissection of the cat by medical students; but in its present form the work does not seem to be adapted to the use of the beginner.

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* "The Bones, Muscles, and Ligaments of the Cat: Explanatory Index to the Plates."

So far as pure comparative anatomy is concerned, it is to be hoped that all parts of the cat may be some time described and delineated with the completeness and fidelity with which the motive organs were treated by Straus-Durckheim, and without the errors of nomenclature into which that great anatomist fell. But the present and more urgent need of the young naturalist, the teacher, and the medical student, including veterinarians, is for a manual of feline anatomy and histology, with the following features: It should contain figures and descriptions of the brain and other viscera, both as wholes and as seen in sections and dissections; also of the tissues; of the entire skeleton, and of portions of the muscular, nervous, and vascular systems. To include the whole of these last would impair the practical usefulness of the book for beginners; but, respecting all the parts which are treated, the statements should be precise and based upon the careful comparison of many individuals. Definite knowledge of a few things is better than vague information concerning many. But above all, it should embrace a clear and complete account of all *methods* of work and manipulation, such as injection, dissection, preservation, preparation, and mounting of organs and tissues; also directions for the performance of the simpler physiological experiments. Its size and cost should be moderate.

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* G. P. Putnam's Sons, New York.

Yet, even in the absence of such a special manual as is here described, the earnest student is far from being helpless in his examination of the cat; his "Gray" or "Quain" will enable him to identify all the viscera and bones, and many of the muscles, vessels, and nerves. At the very least he will learn how to work in that best of schools—personal experience.

E. *Conclusions.*—I have now presented in detail the arguments at my command in favor of commencing the study of human anatomy with the dissection of cats. So confident am I of the efficacy of the plan that I believe the time to be not far distant when the opportunity for such dissection shall be given in all colleges as a basis for physiological instruction; and when, among the slowly but steadily multiplying requirements for admission to medical schools, shall be the presentation of evidence that the candidate is a good practical anatomist; that he has dissected cats or other animals to such an extent as to render him competent to examine, and qualified to appreciate, the organization of man.

This naturally suggests the general question of preliminary medical education, upon which I had the opportunity of saying something two years ago. The intervening time has only strengthened my belief that, as a rule, nothing should be taught in a medical school which can be equally well learned outside. If students could enter upon the study of medicine with a practical knowledge of anatomy, botany, chemistry, physics, and physiology, how great would be the gain to them and to the public! The time now spent—nay, partly wasted—in presenting facts and principles which should form part of a liberal general education, could then be devoted to the exposition of more strictly medical and surgical branches.

Should the suggestions embodied in this article be adopted, one—perhaps both—of two results might be expected. If the previous thorough dissection of cats should enable students to dispense with some of their human material, there would be less of the necessity which seems to exist in some illiberal regions of our country for the procurement of this material in illegitimate ways. Instead, then, of horrified protests against "body-snatching," students would receive the thanks of the community for reducing the number of inharmonious performers of "Nocturnes" and "Lieder ohne Worte."

If, on the other hand, through a change in public sentiment, and corresponding legislation, all existing obstacles should be removed, so that an equal or greater number of human bodies should be dissected than at present, then all preliminary work upon cats would enable students to learn more easily and retain more surely the facts which form the basis of not only medicine and surgery, but also of physiology, hygiene, and psychology. In either case, not alone the profession, but the public, would reap a substantial benefit from the anatomical employment of the cat.

ART. III.—*Topical Use of Ergotine in Acne Rosacea, Granular Urethritis, Gonorrhœa, and Otitis Media.* By STUART ELDRIDGE, M. D., Surgeon of the General Hospital of Yokohama, Japan; late Lecturer on Anatomy, Medical Department of Georgetown University, Washington, D. C.

IN July, 1877, I was consulted by a young married lady in reference to a severe and increasing eruption of acne rosacea upon the nose. The disease had existed for more than two years, had resisted all ordinary treatment, already greatly disfigured the patient, and appeared to be steadily becoming worse. The case was typical; the greater portion of the skin of the nose was occupied by a mat of dilated and tortuous capillaries, while many larger vessels were distinctly visible and the pustules of the disease were almost constantly present. Thorough examination failing to detect any constitutional or uterine cause, theoretical considerations induced me to recommend the use of ergotine, applied during the night, upon lint. Within three weeks good effects were evident; the general hyperæmia was lessened to a very perceptible extent, many of the enlarged vessels had disappeared, and pustules were of very rare occurrence. The patient, fortunately, appreciated this improvement, and faithfully carried out the treatment for six months, at the expiration of which period no trace of the disease could be detected, even by close examination. Up to the present time (July 1879), there has been no return of the disease. During the application of the ergotine no other treatment whatever was employed, no change made in the patient's mode of life, nor did any alteration of the sexual system take place, such as pregnancy or any modification of the menstrual flow. During the treatment the vascularity of the part at times diminished so rapidly that the change, from day to day, was quite apparent. On several occasions when the use of the ergotine was omitted for a few days, improvement either ceased or there was a decided relapse.

My success, just detailed, led me to try a similar but more active line of treatment, in a case which came under observation in September, 1878. This case was of a far more hopeless character than the preceding, as it was a well-developed specimen of the alcoholic type, in a man over fifty years old. The patient having reformed his habits, was anxious, as he expressed it, "to take in his sign." The disease was of some ten years' standing, and occupied the entire nose, which was of a uniform bright scarlet tint, lined with large, purple veins, and diversified by pustules and nodules of condensed and hardened tissue, somewhat elevated above the natural surface. So many of these nodules were present as to have produced a considerable enlargement of the affected organ. I began by several days of continuous poulticing, in order to soften the tissues so far as possible. Injections of two to three minims of the following preparation of ergotine were then made into the *substance* of the skin at intervals of three days, viz.: ergotine, gr. xv; glycerine, ʒss; water, ʒij, thoroughly triturated and strained. The first half dozen injections were followed by the hard bosses of inflammation, threatening abscess, which are familiar to all who have used ergotine hypodermically; in no case, however, did suppuration take place, and the later injections caused but the most trifling inflammatory reaction. From a week to ten days after each injection the field of its penetration was distinctly visible, on account of its whitened, softened, and shrunken appearance. In most cases the limit of the effect of a single injection was the size of a three cent piece, say a circle of one centimetre diameter. Some thirty injections in all were made, when, although the treatment was discontinued, improvement did not cease, so that four months after the ergotine treatment was begun the nose was almost natural in appearance. All hyperæmia had disappeared, and the thickened and nodular masses alluded to had, with one or two exceptions, been absorbed and removed. Three months later, although the patient had returned to his cups, the improvement persisted. I am well aware that removal of the cause is often accompanied by the disappearance of the effect; but in this case improvement was so rapid, and took place in tracts so exactly corresponding to the localities injected, that I am satisfied that solely to the ergotine must be ascribed the cure.

Though I have found, in an extensive experience, that the dictum of Otis, that there is no gleet without stricture, holds good with but few exceptions, there are instances in which, in addition to stricture, there is a granular condition of the urethra which often maintains a gleety or even purulent discharge after complete relief of the contraction has been secured. There are also undoubted though rare cases in which no lesion save granulation is to be detected. The obstinacy of this form of urethritis is but too well known to surgeons of much experience in the treatment of urethral disease. In two recent cases of this kind I have been exceptionally successful by the use of ergotine applied directly to the diseased locality.

Case I.—After an Otis operation for stricture, the gleety discharge persisting for an unusual time, an endoscopic examination was made, when the bulbar urethra for nearly two inches of its length was found to be lined with large, flabby, and tender granulations, the canal having been strictured at a point midway of the tract of granulation. The usual astringent remedies were applied without marked effect, when, reverting to my experience in the treatment of hyperæmia of the skin by ergotine, I decided to try it in the case. The remedy (Bonjean's) was applied pure, by means of the ointment-syringe, after evacuation of the bladder and thorough irrigation of the canal by warm water, the application being followed by an hour's recumbency. Six applications on alternate days effected a cure, the gleet entirely disappearing, and no trace of granulations being visible by the endoscope.

CASE II. had a history of two years' severe and constant muco-purulent discharge following gonorrhœa, the discharge being often streaked with blood, and an occasional slight hæmorrhage following excitement or severe exertion. Careful examination with the bulb-sound and the urethrometer failed to detect any stricture, but revealed an unusually spacious urethra of extreme sensitiveness. Endoscopic examination showed patches of granulations liberally distributed through the whole spongy urethra.

It being inconvenient to see the patient as frequently as would have been required for personal application of remedies, an instrument was extemporized by mounting upon a small flexible bougie a foot of circular, closely woven, hollow lamp-wick of a diameter about equal to that of a No. 12 English bougie. The small bougie was simply passed into the center of the wick, the lower end of the latter having been securely tied. The patient was directed to smear this swab thoroughly with ergotine, rubbing the medicine well into the fibre of the cotton, then, after urination and thorough irrigation of the urèthra, to pass the instrument to the needful depth, there to be retained for half an hour. In this case, daily applications for a fortnight were necessary before the discharge was entirely arrested, and a further ten days' treatment in order to entirely remove the granulations; a result which was completely accomplished, as proved by endoscopic examination.

In neither case did the ergotine cause pain or irritation. The extemporized instrument above mentioned is very superior, for the application of ointments, etc., to the ordinary method of smearing the smooth and non-retentive surface of a gum bougie. The softness and smoothness of the cotton, when covered with ointment, allows of its easy penetration, while it carries an appreciable amount of the remedy used; and, if retention in the urethra is advisable, the instrument lies there with far less discomfort to the patient than a full sized bougie. Of course, after each application, the bougie which serves as a stylet should be removed, and the cotton well washed in hot water, to which a little carbolic acid should be added.

Since the above was written, I have treated three cases of obstinate gonorrhœa by swabbing with ergotine. The first case—in which, under my own supervision, the patient had been through a most thorough course of treatment both by injections and, these failing, by internal medication—yielded to two applications of ergotine. So short a time, ten days, has elapsed since the cessation of the discharge that it is not impossible that the effect may yet prove to have been but temporary. The immediate effect was, however, so startlingly complete that it augurs well for this method of treatment. The second case, before coming into my hands, had been treated for six weeks by injections of zinc, matico, and nitrate of silver. I have made four applications of ergotine, and the discharge, which greatly diminished after the first swabbing, has now almost ceased. The third case, in which the patient had endeavored to treat himself by strong injections of nitrate of silver, has received six applications of the ergotine, but without marked effect. There is, however, in this case a strong suspicion of prostatic disease of old date.

I have tried the ergotine in one case of old otitis media, accompanied by destruction of the membrana tympani. The history of the case is the common one, of existence since childhood with alternate exacerbation and remission. For the past year, however, the discharge has been constant and in large quantity. The cavity was, at the beginning of treatment, lined with granulations, rather more sensitive to touch than is usual in this disease, and presented, altogether, a decidedly discouraging appearance. I have made eight applications of ergotine, and the present condition is as follows: The granulations have shrunk until it is difficult to detect them even upon those parts where they were most developed. The discharge has entirely ceased, and the sensitiveness which rendered the earlier applications almost unbearable no longer exists. The ergotine was, in this instance, applied by a camel's-hair pencil, after having been diluted with sufficient glycerine to make it flow easily; applications were made on alternate days, and, after the use of the ergotine, a small quantity of talc was blown into the ear, with the idea that mixing with the ergotine and glycerine it would give sufficient body to insure the longer remaining of the drug in contact with the diseased surface. The case is still under treatment, and it remains to be seen to what degree the present great improvement will prove permanent.

Altogether my experience of the topical use of ergotine, in diseases where hyperæmia constitutes a prominent feature, has been so favorable that I shall certainly experiment with it in many diseases in which, so far as I am aware, it has not as yet been used, e. g., certain skin diseases, as eczema, vaginal leucorrhœa, and nasal catarrh. Many other possible applications of the drug will, of course, occur to the reader. It is already recognized as valuable in conjunctivitis, and will probably prove of special benefit in the granular form of that disease.

ART. IV.—*An Improved Method of applying Heat to the Chest.* By THOMAS J. MAYS, M. D., Upper Lehigh, Pa.

THE great therapeutic value of hot applications was demonstrated long ago, and they now form such an important link in the treatment of inflammatory diseases of the chest that they are employed in one form or another, or in their equivalents, by the majority of practitioners. The impending danger often associated with many of these diseases, both acute and chronic, renders it imperative that we possess a remedy which is at once powerful and sufficiently counteractive in their treatment, and I can confidently say that, for this purpose, the external application of heat is one of the most serviceable and effectual agents at our command.

I will not enter at present into a detailed discussion of the *modus operandi* of heat on the body; but for a full expression of what I believe to be its true action, as well as that of other agents applied to the exterior of the body, I would beg leave to refer the reader to Chapter V. of my little work "On the Therapeutic Forces." All that I deem necessary to say on this point in this connection is that heat *accelerates molecular motion* of the body, and when properly regulated has the power of translating this mode of activity from disease to health, and in this way stamps out inflammation and other diseases. That an agent like heat possesses such a power becomes evident when we examine the principle which obtains in the progression and recession of inflammation. For "if inflammation in a quiescent state, i. e., neither extends nor diminishes its area, it is positive evidence that there exists an equilibrium between health and disease; and if, from any incidental cause, the normal activity of the surrounding part is depressed, the balance between these two states becomes disturbed, and the disease consequently spreads. So precisely on the contrary, if the molecular activity of the surrounding part is from any cause enhanced, the balance is likewise destroyed, and health extends its territory. Now, in heat we possess a therapeutic agent" wherewith we are able to enhance molecular activity in the surroundings of inflammatory action, and thus force the battle-line into those parts which were formerly held by disease, and by the continuation of such a process of *stimulation* we are not only able to prevent the spread of the disease, but also to eradicate it.

The medium which is generally employed for the purpose of applying heat to the body consists of a poultice, which is composed of one or more of the following substances mixed with water: linseed-meal, slippery elm, oatmeal, corn-meal, bread, starch, bran, potatoes, etc.

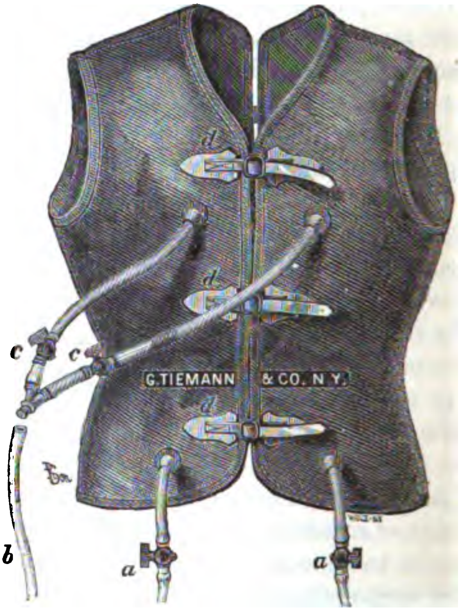
Now, the chief and essential points of utility in a poultice are:

First: *A capacity to retain a moderately hot and constant temperature.* A poultice should be of a moderate temperature, not too hot to be comfortable to the patient, nor too cool to be of benefit to him. A poultice made of any of the above substances has the power of retaining a sufficient amount of heat at the time of its application, but its heat rapidly dissipates, even after it is properly protected by oiled silk, etc.; and in an hour or in an hour and a half it becomes too cool to be of any further service. Now, if my idea of the vacillating nature of the border-land between health and disease and that of the *modus operandi* of these external stimulants be the true one, then it follows that the more persistent the stimulation is the more effective will it be—the sooner will the battle-line be forced into those parts which were formerly under the dominion of disease. But with the poultice this is impracticable, for its stimulating power gradually diminishes until it reaches its minimum, when it must be exchanged for a hot one; and it is also obvious that during its replacement the process of stimulation is totally suspended, and consequently the reparative process is completely checked, which naturally weakens the forces on the side of health and allows those of disease to renew their strength and aggressiveness.

Second: *Sufficient extension to envelop not only the inflamed, but also the surrounding healthy parts.* This is readily secured when the poultice is made large enough, but as ordinarily made it also falls short in this requirement. As, for example, in many diseases of the lungs, it is very important that the apices should receive their full share of stimulation; yet it is very seldom that we find a poultice applied over the tops of the shoulders; and, even when this is undertaken, a great deal of time is exhausted in making and properly adjusting it, which of course entails a waste of its heat. Again, we have seen that it is necessary to stimulate the surrounding healthy parts in order to enhance their depressed, although as yet partially healthy, activity, and in this way compel their forces to encroach on the confines of disease. Hence, in any inflammatory trouble of the lungs, it is essential that the whole or at least the greater part of their surfaces should be enveloped.

Having had for a number of years a full appreciation of the great value of external stimulation by heat, in the form of poultices, in the treatment of diseases of the chest, as well as a knowledge of their defects and shortcomings, it seemed to me that an effort might be made to overcome these obstacles. Even that mode of "poulticing by steam" originated and devised by Dr. Horace Dobell, of London, England, as far back as 1874, does not, in my estimation, meet all the demands of a first-class poultice in inflammatory diseases of the chest. Here, in many instances, as I said before, it is of the utmost importance that the whole chest be invested, but his apparatus for the trunk of the body, also composed of rubber, simply consists of "a flat bag or cushion" which leaves a greater portion of the lateral and posterior surfaces of the lungs unprotected, not to say anything of the exposed condition of the apices. Indeed, I can well understand how it is that the old-fashioned jacket linseed poultice is superior to such a mode of applying heat to inflammatory troubles in the chest, at least in many acute diseases.

Therefore, with the object of bringing to greater perfection this important auxiliary in the treatment of diseases of the lungs, I designed a rubber apparatus which is represented in the following cut, which has been manufactured by Messrs. Tiemann & Co., of New York, to whom I am under many obligations for valuable suggestions received in regard to its construction.



The above figure represents the steam-jacket. *a*, stopcocks and exhaust tubes; *b*, ¾-inch caliber steam-tubing which conducts the steam from the boiler through feeding tubes *c*, *c* to jacket; *d*, *d*, *d*, buckles and straps. The boiler is cylindrical, composed of tin, eight inches in diameter, six inches high, holds two gallons of water (two thirds of which quantity is necessary only for steaming purposes), and fits the top opening of a range, cooking stove, or portable kerosene stove. Its top converges into a ¾-inch tube, to which the rubber-tubing is attached.

It will at once be observed that this rubber steam-jacket strictly fulfills all the essential requirements of a strong and powerful, yet moderate external stimulant, and possesses the following prominent advantages over poultices and other appliances previously introduced to the profession: It envelops the whole chest completely. It is light and readily applied. It retains its position on the chest without difficulty. It is easily managed and operated. It is capable of maintaining a constant and uniform temperature. It requires no renewal; and patients, if strong enough, can sit up in a chair, or, if too weak, lie in bed while using it.

Before this jacket is applied, it is necessary, in order to protect the skin from any undue effects of heat, to envelop the whole chest with a vest composed of spongiopiline, or of several thicknesses of heavy flannel, which may be either wet or dry, according to the condition and indication of the patient.

From a limited experience in the use of this steam-jacket, I believe it to be a most valuable and important adjunct to the therapeutics of protracted and obstinate diseases of the lungs, such as interstitial pneumonia, chronic bronchitis, and even pulmonary consumption. Of its influence on the more acute inflammatory diseases of these organs, I am unable to say much from an experimental standpoint, not having had an opportunity of testing it thoroughly, but, judging from the efficacy of poultices and other similar applications in these diseases, I think it is reasonable to predicate for it a like remedial effect.

ART. V.—*Treatment of Eclampsia with Veratrum Viride.*[*]

By FRANK KENYON, M. D., Scipio, N. Y.

MY design in this paper has been to further direct attention to the physiological and therapeutical properties of veratrum viride, with especial reference to its applicability to the treatment of eclampsia.

This valuable medicine, so far as its therapeutic properties were at that time known, is well described by Dr. Osgood in the "American Journal of the Medical Sciences" for August, 1835. Attention was again called to it by Dr. Norwood, of South Carolina; and in 1872 Dr. Eugene Peugnet, of New York, published in the "Record" a series of experiments made by himself for the purpose of ascertaining the physiological and toxicological properties of this plant and its alkaloids.

In 1835 Bullock, of Philadelphia, found in veratrum viride two alkaloids, which he named viridia and veratroida. Alkaloids have been obtained at various times from veratrum album, and known as veratria, jervina, baratyna and a resinoid veratrine. At one time the alkaloid veratria obtained from veratrum sabadilla was supposed to be identical with the alkaloids of this plant, but such is not the case. The careful, thorough, and elaborate experiments made by Dr. Peugnet demonstrate:

1st. That veratria, the alkaloid of veratrum sabadilla, is distinct from either of the active principles of veratrum viride or of veratrum album.

2d. That viridia, an alkaloid of veratrum viride, and jervina, an alkaloid of veratrum album, are identical in chemical, therapeutical, and toxicological properties.

3d. That the veratroida of veratrum viride and of veratrum album are identical in all respects.

4th. That the resinoid veratrine of veratrum album is a violent cathartic, producing intense hyperæmia of the alimentary mucous membrane, while the veratrum viride is quite inert in this respect. In this consists the essential difference between the medicinal properties of the two plants.

These alkaloids at present are difficult and expensive to obtain. But, as either the fluid extract or the tincture of veratrum viride represents the sum of the actions of its alkaloids, it is sufficient for my present purpose to consider its therapeutic action.

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[*] Read before the Annual Meeting of the Medical Association of Central New York, held at Rochester, November 19, 1878.

The drug is quickly absorbed, and enters the circulation rapidly. It enters the vasa vasorum and through them impairs the sensibility of the vaso-motor nerves, the blood-vessels thus losing their tonicity and power of contraction. It has no direct action on the brain, but is a spinal motor depressant, by its physiological action on the vaso-motor nerves. Through this depressant effect on the spinal cord the muscles lose their irritability, and do not readily contract under nervous or galvanic stimulation. Its effect is closely analogous in many respects to that obtained by Claude Bernard by dividing the sympathetic.

Dr. Peugnet says: "It is a spinal motor depressant, not by direct action, but by secondary action on the sympathetic through the vaso-motor nerves." Dr. H. C. Wood says: "In addition to its well-known power of diminishing the pulse, it is a direct spinal motor depressant, appearing to impair the conducting power of the nerves and the irritability of the muscles."

Percy says: "It is a reliable and powerful arterial sedative; with it the force and frequency of the pulse can be controlled almost at will. It renders the respiration slower and easier. It lessens both vascular and nervous action, and thus relaxes the muscular system and diminishes the supply of blood to the brain."

Having stated so much of what is known of the physiological action of veratrum viride, I will proceed to consider some points connected with eclampsia, and afterward endeavor to explain the remedial connection between the therapeutical action of veratrum and the pathological action in puerperal convulsions.

The name puerperal convulsion might seem to be a misnomer, inasmuch as convulsion may occur at any time during pregnancy, parturition, or childbed; while this name would imply that it was a disease occurring during labor only. But, according to the statistics of Braun and Weiger, 24 per cent.

of cases occur during pregnancy, 54 per cent. during labor, and 22 per cent. during the few days immediately succeeding. Now, when we consider that pregnancy occupies 280 days and childbed two to three weeks, in all near 300 days, while labor occupies a day or half a day, the immense preponderance of parturition as the immediate exciting cause of eclampsia amply justifies the application of the name puerperal convulsion, as used in the English language.

Cazeaux defines it as "an affection characterized by a series of fits in which nearly all the muscles of relation, and sometimes those of organic life, are contracted convulsively, and which fits are usually accompanied with or followed by a more or less complete suspension of the sensorial and intellectual faculties for a variable period."

Usually the onset of the first fit occurs without warning or any apparent premonitory symptoms. The face and neck appear swollen and injected during a paroxysm, the eyelids are prominent and open, the eyeballs exhibit quick-rolling motions in the most different directions; the vessels of the conjunctiva are injected; the mouth is widely open and distorted, and the jaw moves convulsively in clonic spasm; the tongue is often protruded and bitten. In all of the muscles of the face distorting and twitching movements are observed, the upper extremities are bent, the trunk is twisted to one side, and all of the extremities participate in the jerking motions, the respiration altogether ceases for many seconds from the muscles of respiration, especially the abdominal and intercostal muscles, being in a state of contraction; the carotids pulsate strongly, the veins of the head and neck are swollen from the stoppage of blood in the lungs, and the face becomes cyanotic; the bladder is emptied of its contents, and fæces are often extruded. Suddenly, at the height of these symptoms, a short, quick, gasping, convulsive inspiration betokens a change: the quick-rolling eyes become fixed in a glassy, vacant stare, the distortions of the face cease, the jerking movements of the limbs are still, and they become half rigid; the respiration is frequent, difficult, and stertorous; a thick, viscid, and (if the tongue has been bitten) bloody saliva blubbers and sputters from the mouth, and there is entire absence of consciousness and sensation. This soporose condition may last from fifteen to thirty minutes. But gradually the stertorous breathing becomes less noisy, more regular and free, the rigidity of the limbs diminishes; consciousness may return so that short answers may be got to questions, but there is no recollection of what has happened. After the patient awakens she complains of headache and great languor, and her speech is thick and indistinct. If she is closely watched, it will be noticed that there is hyperæsthesia and an increase of reflex sensibility, which is often intense. Gradually comes on a restlessness, a stretching, a slow, tremulous, uncertain bending of the arms and hands, a jerking of the facial muscles, a faint flushing of the skin, and, which is of more importance, the pulse grows hard, wiry, and fast, the breathing becomes irregular, and has a jerking, gasping movement. These are the premonitory symptoms of another paroxysm. Doubtless, if looked for, they might be observed before the first attack, but usually are not. In treating these cases, this stage betokening the approach of a fresh paroxysm must be closely watched for and controlled. When the fits recur, complete unconsciousness and coma supervene, and continue until recovery or death takes place. One symptom occurs so almost universally, in connection with cases of puerperal convulsions, as to leave little or no doubt in the severest mind in regard to its intimate relation to the train of morbid phenomena which culminate in convulsion. And although the presence of albumen in the urine does not of itself constitute a disease, admitting that it may be but the symptomatic expression of a local lesion, or is sometimes the result of a general affection of the economy, admitting that all cases in which it occurs are not inevitably accompanied by that train of nervous derangements which are so much to be dreaded, yet when we consider the converse of all these concessions, and find that the occurrence of eclampsia is so universally preceded and accompanied by albuminuria, that the fewness of genuine exceptions but renders the general rule more certain, we are forced to the conclusion, and it assumes the aspect of an arbitrary proposition, that there is a causative relation between the two facts.

Some investigators have reasoned that the accumulation in the blood of urea, from the non-eliminative action of the kidneys, is the immediate cause of the convulsive seizures. Others that the urea is first decomposed into carbonate of ammonia. Loomis says: "Whatever the poisonous agent may be, in its action it does not seem so much to directly excite convulsion or coma as it does to increase the irritability of the nervous system, and the consequent liability to convulsion from causes which under other circumstances would produce no noticeable disturbance."

From the consideration of all these symptoms, we may conclude that puerperal convulsion is an acute neurosis of motility, characterized by general tonic and clonic spasm of the muscles, with temporary removal of consciousness and reflex irritability. These convulsions have their immediate cause in an hyperæsthesis, an excessive impressibility of the motor system of nerves, induced by pregnancy and increased by the parturient process, and which is due to the accumulation in the blood of certain noxious and effete matters normally excreted by the kidneys.

Having arrived at this conclusion, one naturally seeks an agent that not only has the power to control muscular spasm by overcoming this acute degree of reflex irritability, but at the same time by its action shall tend to reopen the avenues of elimination, either by counteracting the effects of the uremic accumulation on the nerve centers, and thus facilitate the action of diuretics and diaphoretics, or itself act directly as a detergent. If I may be again permitted to borrow the terse language of Loomis, "Our first efforts must be directed to diminishing reflex sensibility and to subdue spasmodic muscular paroxysms, for these if continued either will directly destroy life, or end in equally fatal coma."

Only one who has closely watched a patient after the period of coma which succeeds the paroxysm has passed away, and seen how the least irritation, as the slamming of a door, moving the patient in bed, talking in the room, or even a current of air from an open window, immediately produces a quickening of the pulse, a flushing of the cheeks, a twitching of the facial muscles, a restless motion of the hands, can conceive of the intense susceptibility, the acute degree of reflex action at the time existing in the nervous system of such a patient.

To diminish this extreme degree of irritability, it seems to me that veratrum viride in its capacity of a spinal motor depressant is especially adapted.

Dr. Tyler Smith says: "The true puerperal convulsion can only occur when the central organ of the nervous system, the spinal marrow, has been acted upon by an important class of its incident nerves." This being true, a remedy which lessens the sensibility of this central organ to the morbid impressions, at once breaks the chain of symptoms and prevents their culmination in convulsions. This exalted condition of the nervous system seems to be entirely counteracted by veratrum viride as soon as the physiological effect of the drug is obtained. The first apparent effect is a gradual slowing of the pulse from 120, or more, to 80 or 90; at the same time it becomes fuller and softer. Usually at this point the pulse will vibrate, as it were, between 70 and 90; any disturbing influence will cause an exacerbation to 100 or more, and at any such time chloroform should be given for a few minutes until the patient is again quiet. Gradually the patient grows less excitable, diaphoresis comes on, the pupils are dilated, then nausea with general relaxation ensues, and the pulse becomes permanently below 70, and may go down to 60, or even to 50. These symptoms of relaxation indicate the amount of depressant action on the motor centers, which is sufficient to prevent the recurrence of convulsions. If before the administration of veratrum is commenced the stomach be full, so that the medicine is absorbed slowly, or if the patient has been taking opium or any alcoholic stimulant, the action of the veratrum will be retarded. But it should be, nevertheless, pushed until the point of nausea and general depression is reached. The administration of veratrum should now be maintained in just sufficient doses to continue the physiological effect of the drug until danger of the recurrence of convulsion is over. It may, however, now be accompanied by or alternated with diuretics or saline cathartics as may be deemed advisable. I will now add the history of two cases to illustrate this plan of treatment.

Case I.—Mrs. L., American, primipara, confined May 4th. Seen at 5 A. M. in consultation with Dr. Van Buskirk, who had been with her twelve hours. Presentation normal; head engaged in pelvis; pains regular and frequent; but there had been little or no progress for six hours. Forceps were applied, and a female child delivered without difficulty. Half an hour later a severe convulsion occurred, followed by coma, with stertorous breathing, altogether lasting thirty-five minutes. Before the period of coma had passed away, the administration of veratrum was begun by placing ten drops of tincture on the tongue. This dose was repeated every fifteen minutes until eighty drops had been given. When the first dose was given, the patient was entirely unconscious, her face and neck swollen, her eyes glassy, fixed, and staring. Her breathing slow and snoring. Her pulse 90. At the second dose she was semi-comatose, could swallow and speak. Forty-five minutes after the fit she became restless, flushed, and her pulse rose to 130. Another convulsion seeming imminent, chloroform was administered. When the time for the third dose arrived, the pulse had diminished to 102. At the time for the fourth the pulse was 94. The patient was conscious, but extremely sensitive to noise or any disturbance. An hour and a half after the fit there was another exacerbation, the pulse rising to 135, and there was for three or four minutes a spasm or rigidity of the right hand. Chloroform was given freely for a time. After this the pulse diminished to 84. Then came another slight exacerbation, after which the pulse fell to 72, and nausea and vomiting ensued.

I have described this case thus minutely to bring out the fact that there was a tendency to recurrence at intervals of three quarters of an hour. After nausea came on, the pulse remained between 60 and 70 during the day. The patient complained of headache and extreme sensibility to light, noise, or any disturbing influence. She made a good recovery.

Case II.—Mrs. A., American, multipara, confined May 17, 1877. Patient had had gradually increasing anasarca for two months, but no medical treatment until the last five days. Seen at 4 A. M. Had slept at intervals during the fore part of the night. Now had light labor pains at regular intervals, and gradually increasing in length and severity. The labor was normal, and at six o'clock the child was born dead, the blood being clotted in the cord and placenta.

At eight o'clock I left the patient apparently in good condition. About half past nine she had a convulsion, and about an hour later another occurred. I returned at eleven o'clock, and immediately began the administration of veratrum viride. The pulse was now 132, the patient semi-comatose, and complained of nothing but headache. Drs. Gilmore and Fordyce arrived about twelve o'clock. The administration of veratrum was continued until, at 4.35, ten drops of Squibb's fluid extract and over seventy of Norwood's tincture had been given. The specific effects of the drug were now manifested, and the convulsions ceased.

In all she had eight convulsions, recurring at intervals of about an hour. Five occurred after the administration of veratrum was begun, and before the physiological effects of the drug were obtained. The slowness of its action in this case I attribute partly to whiskey taken during labor, and partly to the stomach being full, causing a slow absorption of the drug. After the convulsions ceased the patient remained comatose about twelve hours, then slowly recovered.

To Dr. Fordyce, who remained with this patient continuously until the next morning, I am indebted for full notes of this case and for very valuable advice and assistance in its management.

ART. VI.—*The Relation of Diet to Yellow Fever.* By FELIX L. OSWALD, M. D., A. M., formerly Director of the City Hospital of Vera Cruz, Mexico.

SINCE the emancipation of physical science from the despotism of a thaumaturgic dogma, the medical art, like chemistry and astronomy, has been divorced from many spurious elements which had become so blended with it that their elimination required the expurgative and reconstructive efforts of different centuries.

If we should characterize the general result of this metamorphosis, we might say that in practice our science has become more prophylactic, and in theory more *subjective*, as contrasted with the mediæval systems, which from the fifth to the end of the sixteenth century were exclusively antidotal-therapeutic, while the pathological exegesis of the prevailing schools was immoderately, often almost incredibly, far-fetched. The doctors of the Byzantine Empire, as well as their West-Roman colleagues, ascribed the seven years' plague that ravaged the Mediterranean coasts to the influence of the great comet of 531, and the especial destructiveness of the epidemic in Egypt and Southern Syria to the Nestorian and Monophysite heresies of those countries. The Italian physicians of the thirteenth century still modified their prescriptions according to the conjunction or opposition of the moon and the more conspicuous planets; and even Avicenna thought it his duty to subject the entire household of his royal patron to "an astringent regimen of nine days, combined with full doses of diacodium and other hypnotics," in order to—counteract the disturbing influence of an earthquake.

The progress of chemistry and anatomy, of comparative ethnology, and above all the introduction and the comparative study of vital statistics, have enabled us to recognize the causative connection of individual habits with disorders which the fancy of mediæval mystics attributed to cosmic disturbances or to the provocations of an irascible and somewhat capricious deity. Scrofula, epilepsy, gastric spasms and many chronic complaints are now generally admitted to be the consequences of an habitual abuse of our digestive, procreative, or respiratory organs; but the prevailing views in regard to the origin of epidemic diseases are still strangely extroitive. We would be inclined to doubt that a healthy man of exemplary habits should suddenly have been prostrated by an attack of delirium tremens or syphilitic gangrene, and even a chronic catarrh can no longer be excused with the chronic malignity of the weather; but conscientious and enlightened physicians still think it possible that thousands of persons, of unimpaired constitutions and innocent of dietetic sins, should be victimized by such disorders as violent convulsions of the digestive apparatus, paroxysms of nausea, and bilious or catalytic degeneration of the vital fluids, merely because their quarantine officers omitted to fumigate a consignment of Panama hats or a bale of Brazilian gunny-bags: in other words, that Nature punishes the inhabitants of a North American city for the misdeeds of a South American swamp population. We hear of towns "whose previous sanitary condition was all that could be desired," till the pyretic germs were imported aerodynamically from a distant swamp, or by the surreptitious arrival of a fever-tainted person, garment or paper, and where, consequently, unforeseen and quite uncontrollable accidents may provoke calamities which the Christians of the Middle Ages might at least hope to avoid by total abstinence from heterodox speculations.

It is difficult to see how the exotic hypothesis can be reconciled with the circumstance that fever epidemics have frequently made their first appearance in isolated inland cities at a time when neither domestic nor foreign seaports could be suspected of having transmitted the virus; while, on the other hand, the advent of ship-loads full of refugees from cholera and yellow fever has failed to affect the indigenous health of their places of refuge, though many of the fugitives died within a few days after their arrival in towns whose pathological record showed them to be very prone to the same diseases. The dispute about the extent of the yellow-fever zone seems a question of geographical latitude rather than of climate, and the fate of such cities as Memphis and Montevideo on their dry hills, and Chattanooga at an elevation of six hundred feet over the Gulf level, argues strongly against the infallibility of the telluric theory; but valid arguments should not be founded upon variable phenomena, and I will content myself with calling attention to some permanent facts which I observed during a fifteen years' residence in Mexico and eastern South America.

Vera Cruz, Tampico, St. Iago de Cuba, Bahia, and other "hot-beds of disease," are remarkable for the frequency rather than for the destructiveness of their epidemics. In Vera Cruz, for instance, the outbreak of an undoubted indigenous yellow-fever endemic, between the first of July and the middle of August, is an annual phenomenon, but the experience of a full century * has proved that the plague confines itself to four,

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* In a memorial to the Spanish Government, dated July, 1752, Don Ruiz Gonzales, the founder of the Charity Hospital of Vera Cruz, states

generally not very numerous, classes: Northern foreigners, Frenchmen, negroes, and Indian (mongrel Mexican) domestics who share the diet and the dwellings of their foreign employers. Newly arrived Italians and Spaniards (even *Catalanes* or North-Spanish mountaineers), who compose more than two thirds of all Mexican immigrants, enjoy the same immunity as the oldest residents; and the native citizens of Vera Cruz would ridicule the idea of the contagiousness of yellow fever. Not philanthropists only, but idle ladies and children visit the city hospital and the houses of fever-stricken foreigners, and no Spanish landlord would think of parting with a solvent boarder whose gastronomic vagaries should happen to result in a *fiebre comatoso* (congestive chill) or a *tifo icteroda*.

Among the native Spanish Americans, from the mouth of the Rio Grande to the delta of the La Plata, neither physicians nor laymen entertain the slightest doubt about the origin of all idiopathic fevers, but refer them to dietetic abuses as unhesitatingly as we would ascribe dyspepsia to the same cause.

The Spanish word *calentura*, derived from *caliente*, hot, heated (like the Latin *febris* and the Greek *πύρεξις* from equivalent adjectives), indicates the chief characteristic, and, according to the ancient Greek and modern Spanish theory, also the chief cause of all pyrexial disorders. In a polar climate our system can assimilate enormous quantities of calorific food, and with the assistance of a refrigerating diet manages to resist a tropical or artificially heated atmosphere whose average temperature exceeds that of the human blood by several degrees. But where the causes of animal and atmospheric heat coincide, where the influence of a tropical sun is aggravated by calorific food, the vis vitæ succumbs as surely as it would to the combination of an arctic temperature with a diet of fruits, rice, and skim-milk. Long before Liebig divided our food into nitrogenous and non-nitrogenous substances, the grim necessity of antipyretic precautions taught

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that the great plurality of the victims are *estranjeros* (non-Spanish foreigners), who after expending their resources are left trebly destitute—sick, without friends, and without the means of self-help.

the Spaniards to discriminate between *comidas frescas* and *comidas calientes*, "cooling and heat-making" articles of diet, the first class comprising fruit, farinaceous dishes and milk, the second animal food and semi-animal and vegetable fats, such as butter, olive oil, and oily nuts.

As soon as the lengthening days and clearer skies announce the end of the rainy season, the Spanish American farmer corrals his milch cows, grinds up a good store of corn-meal, and prepares for a vegetarian summer campaign. Before the end of May the rapidly increasing heat has ripened the berries and fruits of the *tierra caliente;* bananas, oranges, mangoes, grapes, and many kinds of nuts may be looked for by the middle of June, and from that time to the end of October the abundance of the vegetable kingdom enables burgher and rustic to get along very comfortably without meat, and even without eggs, which are left in charge of the brood-hens or sold in the cities to such hotel-keepers and foreigners as may be inclined to risk the gastric consequences. On Friday, and during the Lent season, the Spanish Catholic avails himself of the permission of his church to class fish and eggs as vegetables; but during the Rhamadan of Nature, from June to November, he eschews them as *demasiado caliente*—too calorific, rising thus, instinct-taught, above an arbitrary and probably imaginary distinction. Corn cakes, baked perhaps with a modicum of butter, milk, rice pudding, sweet potatoes, honey, and fruits, are the staple diet of the poorer classes; the city-dweller and the wealthy *haciendero* may add vegetable soups, northern potatoes, wheat pancakes, molasses, and fruit-mixed sweetmeats, while the metropolitan epicure finishes every meal with a plate of *nieve con pasteles*, ice-cream, and confectionery, and never counts his glasses of iced orangeade. Where cold springs are scarce and ice too dear, the peasant of the *tierra caliente* helps himself with the porous *cantaras*, big jugs of half-baked and unglazed clay, which permit the moisture to ooze through till it covers the outer surface like a heavy dew, and, by its rapid evaporation, cools the contents by fifteen or twenty degrees; or keeps a water-barrel in the shade, where it retains the temperature of the night air through the larger part of the day. Rich and poor, young and old, avail themselves of the nearest bathing facility, and enjoy themselves in the splashing surf or in the deep pools of the mountain creeks without any superfluous prudery. At the first signs of *calentura*, headache, loss of appetite, or a light chill, the diet becomes more strictly frugal and baths more frequent, while common cold water is swallowed *invita natura*, by quart-cups full, like Seltzer or Blue Lick.

With such internal and external anticausotics, even the dweller of the hot coast swamps manages to resist moist heat and miasma till the rainy season with its stormy wet days and chilly nights enables him to relax the strictness of his regimen and to indulge in fried bacon, *garbanzas*, and occasional drams of aguardiente.

Not so the foreign merchant of the seaport towns or the independent negro of the coast plantations. Mr. Smith, Mons. Lefevre and Herr Strauss, with their respective families, insist on their daily beefsteaks, their wonted greasy made-dishes (served smoking hot), and a few daily bottles of lager beer, porter, or vin de Bordeaux, while Sambo revels in ham-fat and peach-brandy. If they reached Vera Cruz or La Guayra in the fall of the year, they may enjoy their usual health for a few months; but, soon after the vernal equinox, the commercial gentleman who continues to observe his accustomed rules of business and diet becomes conscious of an increasing loss of appetite and that dull discomfort which the French describe as a *cerveille lourde*, a heavy brain, while he can not help noticing that his children appear a little paler and more languid than usual. He does not enjoy his breakfast any more, and envies his Mexican clerks who can get through half their day's work on a biscuit and a handful of plantains; but his conviction that muscular Christianity and the industrial virtues can only be supported on three carnivorous meals obliges him to persevere in the beaten track, and before long his cerebral oppression increases to a very positive headache and his loss of appetite to a chronic nausea. His wife and children complain of weariness and troubled dreams, and some fine morning the family awakens with a few well-developed cases of yellow fever on hand.

They may die by acting upon the advice of their countrymen, or they may survive by acting against that of the Spanish quack, who will exaggerate the dangers of a hegira to the mountains or across the sea; but, if they want to stay and live, they have to trust themselves to the experience of a conscientious Spanish physician, who will commence by starving and bathing them, allow them a little cold rice and ice-cold raspberry jelly on the second day, keep them on half rations of frigid and frugal diet and liberal quantities of ice water for the next ten times twenty-four hours, and get them on their legs again at or before the end of the second week.*

If the loss of vital power has been very great, alcoholic stimulants and mild diaphoretics are used in the South American hospitals; and after the crisis of the disease the spinal aches are mitigated by external counter-irritants, epispastics, or persistent friction with a rough and slightly moistened woolen rag.

French and American mechanics who can not afford a separate household, and have to board with their employers, *more terræ*, generally pass unscathed through the hottest summers; and that the immunity of the natives is not a privilege of their race is proved by the fate of the *vaqueros*, or beef-eating herders of the chilly table-lands, who avoid the *tierra caliente* with an instinctive dread, and rarely return alive if they get on a "*borracheria*," a prolonged spree, in the coast towns, instead of hurrying back as soon as they have disposed of their stock. In the summer of 1869 a Massachusetts company hired six hundred *peons*, or Indian day-laborers, to finish the railroad from the Mexican capital to Vera Cruz, on what the natives considered very liberal terms, viz., six dollars a week and board, or eight dollars without board. Many of the *peons* had come from a great distance, and had to accept the six dollar alternative and the company's rations: coffee, sugar, corn bread and bacon, of good quality and in abundant quantity; but before the end of July more than forty per cent of the company's boarders were down with chills and fevers, while those who had boarded with the neighboring rancheros stood their ground, every man of them, and even increased their emoluments by doing extra work on Sundays and in moonlight nights.

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*The anticausotic effect of quinine is very small; and its antiseptic properties, which in malaria proper have at least a palliative value, are neutralized in yellow fever, as Lamprière very pertinently remarks, "by the circumstance that in the advanced stages of that disease the process of assimilation becomes inverted: chyle, as well as the nutritive elements of the blood, is forced back upon the stomach and disgorged in that eruption of cruor commonly called the black vomit."

It is also well known that the yellow-fever epidemics of the West Indian and South American coast towns are by no means confined to swampy lowlands like those around Bahia, Port au Prince and Matamoras, but pay yearly visits to such cities as Havana, Caracas and Rio Janeiro, surrounded by high mountain chains, and such seaports as Vera Cruz and Pernambuco, whose neighborhood rivals that of Mecca and Persepolis in sandy aridity. But the unanimous testimony of native writers and foreign travelers has established a still more curious fact, viz., that the swampiest districts of the American tropics, whose population is exclusively Indo-Hispanic, enjoy a greater immunity from periodical fevers than our northern seaports and northwestern table-lands. The Brazilian forest-province of Entre Rios, the interior of Paraguay, the lowlands of southeastern Bolivia and the swampy peninsula of Yucatan would be the healthiest portions of our great continent, if the absence of what we call climatic diseases could be accepted as a safe criterion; but the accounts of the first discoveries show that the same diseases were almost unknown in regions which are now justly dreaded—by northern immigrants. In the valley of the Amazon and on the larger islands of the West Indian archipelago, fevers made their first appearance with the advent of European colonists,* who suffered as much as our Arkansas pioneers, and were decimated by repeated epidemics of a very malignant type till the advice of the natives and experience with its dire *argumenta ad hominem* effected a gradual but thorough culinary reform.

I do not attempt to deny that purely objective causes, zymotic germs, and even anorganic gases may provoke the outbreak of a pyrexial epidemic; but I can not help thinking that their influence resembles that of cold water upon a hollow tooth or cold air upon diseased lungs: their agency is a proximate, but by no means the original or even a necessary adjuvant, cause; they influence a predisposed, morbid digestive system, but affect a healthy digestive system no more than cold spring water affects a healthy set of teeth; their effect is diathetic rather than morbific. Zymotic germs may accelerate a result which the accumulation of putrescent ingesta would sooner or later have accomplished without their aid; for we can not doubt that animal food (especially the fried pork-steaks and bacon-fat gravies of our Southern cuisine) requires a greater digestive effort than fruit and farinaceous dishes, nor that a sultry climate still further retards the assimilation of such substances; and, if we admit that the blood changes in ague, yellow fever, etc., are *catalytic*, a simple experiment will show how wonderfully the atmosphere of a Southern marsh quickens an inchoate process of organic decomposition. If we take a stout club of the hardest wood we can find, say dogwood, box, or lignum vitæ, and deposit it in a Northern mountain forest, it will rot, but so slowly that at the end of a year it might still be used as a formidable offensive or defensive weapon. Throw the same stick into a Louisiana coast-swamp, and after a few days it will break in your hand like a rotten cabbage stalk, i. e., the process of decay has been accomplished with an at least two hundred fold increased rapidity. Healthy trees, on the other hand, may be transplanted into a Southern swamp and thrive there as in their Northern native soil.

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* Navarette, "Viages y Conquistas," t. iii., p. 414.—Acosta, "Hist. natural del Nuevo Mundo," lib. ii., cap. 7.

The destructive and widespread plagues of 537 and 1374 spared the frugal inhabitants of Northwestern Africa and the abstemious Hindoos; and, during our last epidemic, Italians, Jews, and Spanish Creoles experienced the same good luck, if we should prefer that expression. But, if we could ascertain the antecedents of those families or classes of our population who furnished the largest quota of typhus- and yellow-fever patients, and of those who enjoyed the most conspicuous immunity, the comparison of their respective dietetic records would convince us that the contagious principle discriminates in the choice of its victims, and that there is no such thing as a *pandemic* disease.

ART. VII.—*On Urethral Dilatation.* By J. W. SOUTHWORTH, M. D., Rochester, New York.

THE now recognized impropriety of enlarging the meatus (when it is within eight millimetres of the caliber of the spongy portion of the canal) renders it impossible to dilate sufficiently strictures situated within the first inch of the urethra with any of the dilating instruments now in use.

This being due to the inevitable recontraction of the tissues, whether divulsed or incised, after instrumentation has ceased, it follows as a matter of course that the only possible way of bringing about a radical cure must be through the stretching of the parts during the healing process to such a degree beyond the normal caliber as will allow for the subsequent contraction to result in bringing the parts down to the natural size of the urethra at the previously strictured portion. Just how much this will require must be estimated by the surgeon in each case as he finds a recent or old, an elastic or rigid stricture.

In effecting dilatation of the strictured parts, and of those parts only, without cutting the meatus, I have resorted to the expedient of introducing ovoidal wedges of different sizes, made of lead (flattened and grooved on one side), previous to the insertion of the conical steel sound, which latter is made to glide along the grooved surface of the wedge—thus stretching to any desired extent the ruptured or incised tissues.

It is only for stricture situated in the first inch of the canal that there is any occasion for use of these wedges, as the dilators devised by Dr. Gouley, Professor Gross and others, will undoubtedly answer for the deeper-seated parts. A small wire should be attached to these wedges for convenience of introduction and removal, as well as retention in position during the use of the sound, which is passed along the upper side of it in the shallow groove.

Clinical Lecture,

By William H. Thomson, M. D., Professor of Materia Medica, Therapeutics, and Clinical Medicine, in the Medical Department of the University of the City of New York. *Reported for the* "New York Medical Journal."

TRANSVERSE MYELITIS.

Gentlemen: The patient to whom I wish to devote our attention principally to-day is Benjamin K——, a man fifty-three years of age, and a farmer by occupation. He states that he has always enjoyed good health previous to his present trouble, and that his symptoms are great numbness of both lower extremities, a sense of constriction about the waist, and more or less difficulty about the bladder, he sometimes being unable to pass his urine, while at others it comes too freely. These symptoms made their appearance about ten months ago, and were preceded by considerable irritability of the stomach. On further questioning, he says that he has had some pain in his limbs, of a burning rather than a sharp character.

Numbness is a sensor phenomenon which may be due to a variety of causes. Thus, it may depend on disturbances of the circulation, for instance. When due to this, however, it is ordinarily transient in duration, and it is hardly likely that it originates from it in the present instance, because the condition has remained so long. Numbness, it may be stated, is always a sign of pressure (from whatever cause); either along the course of a sensor nerve, or directly upon the spinal cord or brain; and if, in any case, no localized pressure can be detected upon a sensor nerve, or the cord, we must look to the brain itself. As here there is a chronic state of numbness, there must, therefore, exist somewhere a sense of more or less permanent pressure. Judging from the symptoms, there can be but little doubt that there is trouble about the cord in this case, and the sense of constriction that is complained of points to myelitis rather than spinal meningitis. If it were meningitis there would certainly be more pain also.

Deciding, therefore, that we have to do with myelitis, we now wish to know where in the cord the inflammatory process is located. If this were in the gray matter, and particularly the posterior portions of it, we should expect to find more or less interference with the functions of the bladder and rectum. Let us inquire, then, a little more closely into the nature of the trouble with his bladder, of which the patient has spoken. In reply to questions he states that the urine, instead of being clear when it is passed, is somewhat milky, that a sediment is soon formed in it, and that it sometimes smells offensive. Urine that is milky in appearance when passed is, in the vast majority of instances, phosphatic (the cloudiness being due to the presence of the alkalies), although once in a great while a case of chylous urine is found. Now, it is a well-established fact that phosphatic urine always makes its appearance when there is trouble in the cord proper; which is not the case when simply the meninges are affected. Even when there are merely functional disorders present, it is not unfrequently met with.

With such a state of affairs existing, we should expect to find that the patient suffered from inflammation of the bladder; because this alkalinity of the urine, if it remains for any length of time, always gives rise to cystitis; and the signs of the condition are, pain referable to the bladder and a frequent desire to pass water. As the disease progresses a sensor paralysis occurs, and the patient does not feel inclined to evacuate the bladder. Now, has this man motor paralysis of the bladder in addition? In answer to my inquiries, he states that he is not aware when his water is passing from him. This is a significant fact, and it next becomes a very important matter for us to decide, whether he is really suffering from over-distention of the bladder or from incontinence of urine. Many a case has been treated for incontinence, when there were two quarts of urine always in the bladder, especially among aged individuals, with enlarged prostates. On account of the over-distention of the bladder, a deep pouch has been formed by its lower part. Very little of it is left which is capable of expelling its contents, and, consequently, it remains almost constantly full. Hence the patient feels a desire to pass water very frequently—sometimes thirty times or more in the twenty-four hours. When seized in the street with a desire to urinate, it is often impossible for him to control the bladder until he can reach the nearest water-closet. Hence the case is regarded as one of incontinence of urine, when, in reality, a catheter should be introduced, and the accumulated urine withdrawn from the over-distended bladder. In such cases the physician is often greatly astonished to find that there has been retention, instead of incontinence. They are, however, very different from the present case in many respects: the urine being quite clear and perfectly natural in every way, except that it may, perhaps, be of low specific gravity, while the stream of water never stops suddenly while being passed (which is the case here), and the patient is never unaware that the urine is escaping. Then, in chronic retention there is no feeling of numbness, nor sense of constriction about the waist, which form such prominent symptoms in this case.

Recent retention, as is well known, not infrequently occurs in women immediately after childbirth, as a result of pressure during the labor, and it is also met with sometimes in the course of pneumonia and the various fevers, as well as in some cases of insanity. The bladder being over-distended, there is dribbling of urine all the time, and the patient is quite unaware that it is passing from him. We should make it a rule, therefore, never to attend a patient whose intellectual powers are from any cause impaired, without seeing that a careful examination of the bladder is made twice a day. Any over-distention of the bladder is apt to be a very serious affair, and the viscus may never again recover its original power. A woman who has had retention of urine after labor may suffer from cystitis for the rest of her days; and so, if a man who has enlarged prostate (which may never have given him any inconvenience) suffers from retention, he is very likely to always have trouble in the future. It is of great importance, therefore, that any one who has had over-distention of the bladder should undergo a systematic course of treatment for a considerable time; and the one great remedy for this condition is strychnia. Belladonna is dangerous to some such patients, and, at all events, is only apt to increase, rather than diminish, the trouble.

But to return. When in any case we meet with such symptoms as numbness of the limbs and a sense of constriction about the trunk, we should always direct our attention to the action of the bladder and rectum. In regard to the former, we should ask if the water ever stops suddenly while it is being passed, and if from the beginning the patient has lost the power of projecting his urine forcibly in a full stream. In the present instance we find that the stream sometimes stops suddenly, and that sometimes the water is passed without the the patient being aware of the fact. As to the bowels, he tells us that they are ordinarily constipated, and that it is often necessary for him to take purgative medicine, but that sometimes the rectum is evacuated involuntarily, before he knows it. After the passage also he feels as if there was more to come.

When he goes to bed at night, he says his legs feel just as if they were asleep, but sometimes they are involuntarily jerked up, one at a time. He also complains of great stiffness about the knee-joints. When he stands with his eyes shut, and again when he walks, you readily perceive that there is no evidence of locomotor ataxia whatever. Again, we conclude that the disease has not attacked the gray matter of the anterior columns of the cord; for, if this were the case, we should have had rapid wasting (instead of the patient being well nourished, as he is), and, besides, the paralysis would have been much more marked than is here the case. The lesion is undoubtedly, therefore, in the central gray matter of the posterior part, and the trouble is either a localized myelitis or the result of localized pressure.

Now let us see if we can get at the actual cause of the difficulty here. When I ask the patient if he has ever met with any accident resulting in injury to his spine, or ever strained himself there, he states that about a year ago he did strain his back while supporting a heavy weight. After this his back used to pain him sometimes when he stooped over, he says, but there were no special symptoms until two months after the injury, when he began to have a feeling of great fullness about the stomach, which was followed by the numbness and sense of constriction before described. From this history, I think, there can be but little doubt that there was an effusion of blood into the cord during the strain mentioned, and that this was followed by disordered nutrition in the part. The absorption of the blood probably left a cicatrix; and in such cases the results are frequently very similar to those following cerebral hæmorrhage.

What I propose to do here in the way of treatment is to make use at first of strong counter-irritation, and nothing else, at first. During the next four days I shall order the hot glass rod to be applied at a number of points on each side of the spinal column, from the highest point where he feels the sense of numbness downward; and, when he returns here a week from to-day, I shall speak of the medical treatment, which is of great importance in these cases.

[One week afterward the case was again presented, and Professor Thomson then spoke as follows concerning it:]

Since the patient was last before you, applications of the hot glass rod have been made twice to the spine, with an interval of three days. Ten of these applications on each side of the vertebræ were made on both of these occasions; and, as a result, we find that there is already some little improvement, since the patient tells us that he does not have so much trouble with his bladder, and that his left limb does not feel so weak and numb as before. In cases like this, where the bladder and rectum are affected, I may remark incidentally that there is always great danger of bed-sores, which often form with extraordinary rapidity; and therefore we should always be on our guard in reference to their occurrence.

Without counter-irritation (and indeed the special kind of counter-irritation afforded by the actual cautery) I scarcely think that any case of inflammation of the gray matter of the cord would ever get well. It has no tendency toward spontaneous recovery, and blisters or setons are of little or no use. The prompt and peculiar action of the actual cautery, however, is very beneficial; and the applications should be made about twice a week and continued for a considerable period. When applied properly, it simply shrivels the epidermis, while the sore thus left heals very rapidly and leaves no scar whatever, even when upon the face. It is very important that the actual cautery should be used at a white heat and quickly applied. When employed at a red heat the effect is much the same as that of an issue.

We will now begin the medical treatment of the case, in addition, and the agents which the patient principally needs are phosphorus, cod-liver oil, and ergot. I will order for him a phosphorus mixture, which can be readily procured of any druggist, containing one ounce of dilute phosphoric acid and seven ounces of the sirup of the hypophosphites. Of this he may take two teaspoonfuls three times a day. Besides this he should take a tablespoonful of cod-liver oil twice a day, with the morning and evening doses of the preceding. So much for the present. Later it will probably be necessary for him to take ergot, as well as the bichloride of mercury and nitrate of silver. I wish to follow up the patient very closely, if possible, as the neglect of these spinal cases is always followed by disastrous results. Left to nature, not one case in fifty will get well; and if nothing is done for this case, which is a bad one, it will undoubtedly end in total paraplegia. As regards the treatment of nervous diseases, I have been very greatly disappointed in all the recent works which have appeared on therapeutics and practice. Although great advances have undoubtedly been made of late in this department, their authors have shamefully neglected the subject; and you will find that Roberts, Aitken, and Bristow are all exceedingly deficient in this respect.

BRONCHITIC ASTHMA.

Here is a middle-aged man, of healthy general appearance, who complains of cough with expectoration, and a good deal of shortness of breath; the latter being more troublesome at night than during the day. These symptoms having persisted for some time, the question at once presents itself: Is this patient suffering from phthisis? There are, however, quite a number of points about the case which would lead us to decide that this is not the diagnosis here. In the first place the man has not the physiognomy of phthisis. In that affection (as, indeed, wherever there is hectic), the redness of the face is circumscribed, and always confined to the region of the malar bone; while in the present instance there is a diffused redness, which is, as a general rule, characteristic of bronchitis. In phthisis, again, the cheek is usually retracted, while the corners of the mouth are attenuated and drawn back, which is not the case here. Other negative evidences are presented by the appearance of the alæ of the nose and the color of the lips; and the eyes have none of that remarkable brilliancy which belongs to phthisis, and which is due to the transparency of the conjunctiva incidental to the disease. In bronchitis, on the other hand, the eye presents a more or less muddy appearance, as the result of venous congestion; and, when there is emphysema present, it is apt to be very morbidly suffused.

Now, leaving the consideration of the face and glancing at the rest of the body, we find that the whole build of the man is altogether different from what we would expect to find in phthisis. With the latter we have the elongated neck, resulting from the sinking down of the clavicle, which is caused by the disease in the lungs; while, on account of the absorption of fat, the larynx becomes more prominent than usual. There is also marked flatness of the chest. In bronchitis, however, the chest becomes more and more round in form, if the affection persists for any time, until, if there be emphysema associated with it, it assumes the characteristic barrel shape.

On inquiry I can not learn that the patient is troubled with indigestion. Whenever there is present anything like asthma, it is always very important to investigate the condition of the stomach. A great many cases of bronchitis with asthma, as well as of asthma alone, are greatly aggravated by the complication of dyspepsia; and when the stomach has been attended to by the physician there is often very great relief experienced. In the present instance, however, as I have said, there does not seem to be any difficulty of this kind.

The patient says that he has been complaining for only four months past, and, as far as I am able to judge from what we have thus far found, I should suppose that he was suffering from bronchitic asthma. Let us now see what light the physical signs will throw on the matter. When the man is stripped we find that he has a good chest, with no flattening or depression of any kind noticeable about it, although its expansive power is not very marked. On making percussion we get a slight amount of dullness over the upper part of the right lung in front, but everywhere else the note is perfectly clear. Auscultation of both sides of the chest, before and behind, and over both the upper and lower portions, shows that there is almost everywhere diminished respiratory murmur, although exspiration is not as a rule prolonged. This weakened inspiration and exspiration on both sides indicate a tendency to over-distention of the air-vesicles. At the right apex there is noticed quite a sharp sibilant *râle*, and numerous mucous *râles* can be heard on various parts of the lungs. The place where we are most likely to get natural breathing in a case like this is in the lower part of the chest behind; and here we find it so, especially at the base of the right lung.

The trouble here present undoubtedly commenced in an acute attack of ordinary bronchitis, and the patient tells me that he took cold after exposure to wet. It was probably a pretty severe bronchitis, and if it had wholly disappeared it would have passed off with expectoration which would have became more and more purulent in character, and which would have gradually diminished in quantity. When bronchitis is allowed to run on, however, it naturally tends toward asthma, and therefore you can readily perceive that it is highly desirable that every attack of bronchitis should be cut as short as possible. In asthma there is a peculiar susceptibility of the peripheral nerves of the bronchial tubes to reflex irritation, and the affection, when not hereditary, almost always results from neglected bronchitis. There are two diseases in which bronchitis forms a prominent element, and which are particularly liable to be followed by asthma, viz.: whooping-cough and measles. Hence, I always endeavor to cut short an attack of whooping-cough instead of leaving it to nature, as many are accustomed to do; and, unless this course is pursued, the child may become the victim of asthma for the rest of its life.

If this man had remained in the house for a few days a taken care of himself after the acute bronchitis began, would have had none of his present trouble; but, as this has existed only for a few months, I believe it to be perfectly curable now. In three or four weeks, I do not hesitate to say, he will be entirely well if he will follow our directions. Now, what shall we give him? I hear a variety of remedies suggested from the members of the class, and they are all excellent ones; but still it would scarcely be advisable to employ so many at the same time. For the relief of the asthmatic paroxysm, iodide of potassium, Fowler's solution, belladonna, and Hoffman's anodyne would all, no doubt, prove of service; but, in addition, we must not forget that the patient is suffering from bronchitis as well, and requires something that is especially directed to that. He has, as we have seen, a bronchitic asthma; and, if we leave out of consideration the treatment of the bronchitic element, the affection will last a much longer time, and we shall be disappointed in the results obtained. What I would propose to do here would be this: Let an emulsion of linseed oil be prepared by means of gum tragacanth and flavored with oil of wintergreen, and to six ounces of this there may be added one drachm of tincture of belladonna and six drachms of Hoffman's anodyne. Of this mixture he should take a tablespoonful three times a day, about an hour and a half after meals, although the last dose ought to be taken on retiring at night. The iodide of potassium I prefer to give in combination with Fowler's solution; and, in addition to the above, I would recommend that he should take (also three times a day) a tablespoonful of a mixture containing five grains of the iodide and four drops of Fowler's solution to the fluid drachm.

In asthmatic patients we sometimes have three distinct affections to treat, viz., asthma, bronchitis, and dyspepsia; and, when this is the case, we are likely to have a good deal of trouble with them. Here, however, there is no dyspeptic element; while the evidence all goes to show that the asthma is of bronchitic origin, and not a nervous disease primarily.

IDIOPATHIC PRURITUS.

This young man, as you will remember, was before us a week ago, when we found that he was suffering from that troublesome affection known as pruritus. Concerning the latter I should like to make a few further remarks to-day. In true pruritus no pathological changes whatever can be discovered in the skin—not even with the microscope—except such as may be due to the mechanical irritation of scratching. It is to be regarded as a sensor-nervous disease, and this nervous element it is very important to find out. Sometimes, however, pruritus is unquestionably due to some blood-disease in the system. Thus it occurs not infrequently in Bright's disease. Its connection with the ordinary forms of jaundice is well recognized; and sometimes it occurs in disease of the liver of malarial origin, where there is little or no jaundice. Here the blood is charged with excrementitious matters in the form of biliary salts, but there may be none of the coloring matter of the bile whatever in it. We can usually judge whether a pruritus is due to trouble of the liver or not by ascertaining whether there is a marked bitter taste in the mouth. If this is the case, we should direct our attention at once to that organ, if we expect to meet with any success in its treatment. After making an investigation of the case, we find that this patient is suffering neither from Bright's disease nor from disease of the liver. There is one hypothesis more that must be taken into consideration before we set down the trouble as of purely nervous origin, and that is, that he may be the subject of diabetes mellitus. I have repeatedly found sugar in the urine in connection with pruritus, and especially pruritus vulvæ. Whenever you have a persistent case of pruritus vulvæ, you should always examine the urine for sugar; and, if you do not find it at one time, search for it again and again until you have demonstrated that there is no possibility of the patient having diabetes. Particularly should you persist in repeating these examinations if you find that the specific gravity of the urine is habitually high—say about 1·030. In diabetes it has been found that the itching of the skin and mucous membrane is due to the presence of a cryptogamic plant of the yeast family, and the best remedy by far for it is the sulphite of soda, because it has the property of destroying this. It should be used in the proportion of about a drachm to the ounce of water. The various preparations of carbolic acid will also prove of service. I dwell especially upon the connection of pruritus with diabetes, because you may not have had your attention called to the fact. For a long time I was not aware of it myself; but every now and then I would meet with an extremely obstinate case of pruritus, where the patient had been from one physician to another, and tried a numberless variety of remedies, until there seemed but little hope of gaining any relief. In each of these I was finally led to suspect the presence of diabetes, from the fact that the patient was troubled with boils, which constitute one of the more or less characteristic phenomena of the affection. Whenever, therefore, you meet with a case of obstinate itching, associated with the formation of boils, you have grounds for the suspicion of diabetes.

But occasionally we find an instance of pruritus where no blood-poisoning whatever can be detected. There is, then, pretty sure to be nerve-exhaustion; and this, by a process of exclusion, we have found to be the case here. For the past week the patient has been taking small doses of phosphoric acid, nitrate of silver, and corrosive sublimate, in addition to the sirup of the hypophosphites, and locally has made use of olive oil. To-day he reports that he feels better and stronger than he did, and that the itching has been somewhat relieved. I would suggest that the same treatment should be continued, and that he should now commence the use of cod-liver oil, in emulsion, in addition to the other remedies.

Of course, if any of the forms of blood-poisoning which have been alluded to, or if gout or rheumatism had been present, we should have directed our remedies to the special condition upon which the irritation of the skin depended. Pruritus, I may say in conclusion, when it has been of long standing, frequently has the effect of producing a state of melancholy in the patient; and Hebra has noted that it sometimes becomes a cause even of suicide, on account of the intense discomfort to which it gives rise.

Clinical Records from Private and Hospital Practice.

I.—*A Case of Foreign Body in the Larynx.* By HENRY S. OPPENHEIMER, M. D., Resident Surgeon to the New York Eye and Ear Infirmary.

ON the morning of August 5th, Mrs. O. R——, a robust German woman, aged 50, presented herself in great distress and, by means of pantomime and a hoarse, labored whisper, conveyed to me the intelligence that she had swallowed a set of artificial teeth, and that the presence of these in her throat was the cause of all her agony.

The history, which I learned only some hours after the impediment to phonation had been removed, was as follows:

She had been wearing for some time a set of teeth after the plate had been broken in two. This day, while eating a peach, she felt this plate slipping down her throat. She made a violent effort to expel it, which was unsuccessful. She called on the nearest physician, who declined to undertake the case, when he found that his finger inserted into her throat could detect nothing abnormal. The next doctor she could find introduced an instrument with which, he said, he could feel the body, but could not extract it, and so sent her to the infirmary.

An examination with the laryngoscope showed below and in front of the epiglottis a narrow red line—nearly the color of the surrounding tissues—just above the vocal cords and extending transversely across them, being slightly farther back on the right than the left side. A touch with Schroetter's forceps satisfied me that this was the foreign body, and it was not very difficult to engage it in this instrument, and to lock it upon it, but repeated attempts to dislodge it from its position resulted each time in the slipping of the forceps from the plate. I then tried the McKenzie forceps, opening antero-posteriorly, and with these obtained a very firm grip; but found even then that I could not dislodge it without using what I considered undue force. It must not be supposed that this was all done as easily as it is written. Every attempt I made to dislodge the body would usher in an almost suffocating spasm of the glottis, which necessitated an intermission of operative efforts. The filling of the mouth with saliva offered also a frequent obstacle to sight. I finally determined to turn the object if possible. I could form no idea of the shape or exact position of the plate, and the only assistance the patient could give me in this direction was to show on her finger that it was about two inches long. I first pushed the forceps—in contact with the presenting part—as far to the right as possible, and tried to raise up that side of it, but without success; the plate was held firmly. Next I passed them, in the same manner, as far to the left as I could, and there, using some force, I succeeded in turning up the side of the plate, showing one tooth. Taking a new hold, I raised it about half an inch, when it was again arrested. Latero- and antero-posterior motion did not serve to disengage it from this position; and, as a violent suffocating spasm ensued just then, we thought it advisable to use force (Drs. G. R. Cutter and J. E. Stillwell were kind enough to lend me their moral support), and so I tore it out. We found it to be the portion of the plate containing the two posterior molars, with a vacancy (into which a third—natural—molar was intended to fit), guarded by a sharp, metallic, semicircular hook, and joined by two bicuspid teeth. The plate formed an irregular triangle. The line of the teeth, forming the base of this, was a little over two inches; one of the crura, the line of fracture, being 1⅝ inch, the other, the posterior edge of the plate, curved, 1⅜ inch long. Evidently this latter portion had been wedged between the vocal cords; and this was a fortunate circumstance, as it prevented complete closure of the glottis during the spasms. The angle formed by the line of fracture of the plate and the bicuspid terminated in a sharp spicula which must have been fast, and thus have caused the necessity for using force in turning. Lastly, the sharp hook, intended to secure the plate to the sound natural tooth, had caught in the left aryteno-epiglottic fold. The final forcible effort at extraction tore through this. The patient was put to bed, and small bits of ice were administered by the mouth. No untoward symptoms presented, and she was permitted to go home at the end of

24 hours. At that time an ecchymotic spot on the right vocal cord and a clean cut through the left ary-epiglottic fold could be seen. Some hoarseness and pain on swallowing were complained of. Four days afterward the patient presented herself again. The vocal cords looked normal, the cut in the fold had healed, and the slightest hoarseness was the only symptom left to remind her of the accident. It is perhaps well to state that she had the other portion of the plate in her pocket at the time of the mishap.

II.—*Coccygodynia.—Removal of Coccyx followed by Entire Relief.*

By F. A. Stanford, M. D., Columbus, Ga.

Mrs. ——, of robust appearance, and otherwise in excellent health, had for many years suffered, almost constantly, from excruciating pain in the region of the coccyx. This pain was always intensified upon the slightest movement of the body. She has passed successfully through several confinements, and, at such times, has had no particular trouble. After a consultation with her kinsman, Dr. Seth Jordan, the case was determined to be one of neuralgia of the coccyx, and the operation for the removal of the bone advised, as the only means of relief. The patient promptly assented to this.

May 14th, assisted by Drs. Jordan and Grimes, I separated the three lower segments of the coccyx with the bone forceps. Considerable difficulty was experienced in separating the segments from their soft attachments, in consequence of the contraction of the sphincter ani muscle. This, however, was safely effected, though not without a good deal of risk of wounding the rectum. The patient has made a slow but good recovery from the operation; and since the day after the operation has expressed herself as feeling nothing of the old enemy, pain.

In examining somewhat the literature of this most painful affection, it is surprising to find that our standard works of surgery are so silent upon the subject. My friend the late lamented Dr. Nott told me of his experience in this operation, which he contributed to the medical periodicals of the time. Ziemssen speaks of it, and refers to the operations performed by Dr. Nott and Professor Simpson. Professor Simpson is the most elaborate writer upon the subject I have met with, and is especially truthful in detailing the symptoms which characterize the disease.

Should an opportunity again occur for a performance of this operation, my first step would be to separate the bone from all soft attachments, making its removal a last step in the operation.

To my assistants, Drs. Jordan and Grimes, I am much indebted for a happy completion of the operation.

Notes of Hospital Practice.

HOSPITAL FOR RELIEF OF RUPTURED AND CRIPPLED.

DR. JAMES KNIGHT, Physician.

Scirrhus en Cuirasse.—A woman, aged fifty-six, was seen at the out-door department of the institution suffering from an affection of the skin of the arm and half of the chest. She gave the following history: One day, last January, while working hard with her sleeve rolled above her right elbow, she noticed a pain at the portion of the arm that the fold of the sleeve pressed on. Shortly afterward the arm and forearm became much swollen, and continued so till the present time. Pain appeared during February, and continued. During February the right breast became hard. When she was seen, the skin of the arm and half of the chest was quite hard, the glands of the axilla were involved, the breast presented the characteristics of scirrhus, and near the median line there was considerable ecchymosis. The patient was shown at the meeting of the American Dermatological Association, and the diagnosis made there was *Scirrhus en Cuirasse.* Since that time the induration of the skin has extended beyond the median line; the left breast is involved; the patient suffers pain in the arm constantly. Rubber bandages were applied to the arm, but without benefit. Fowler's solution, five drops three times a day, was administered, but the disease shows signs of advancing. The patient lives near the institution, and can be seen by any one interested in the disease.

Rotary Spasm; Cure by Ergot.—A boy, aged six, was brought to the institution suffering from rotary spasm. The muscles involved were those supplied by the left spinal accessory nerve. The disease had lasted ten days. ʒj doses of fluid extract of ergot were ordered. The spasm began to lessen after the administration of the remedy, and ceased in a week. There was no return after four months.

MOUNT SINAI HOSPITAL.

Cancer of Jejunum; Death.—A patient was admitted to hospital suffering from vomiting and constipation, together with abdominal pain. He was a painter, aged fifty-two, and was thought, at the time, to be suffering from lead poisoning. The first symptoms were noticed during December, 1878, when he began to vomit, from three to eight hours after eating. At that time, abdominal pain and constipation were prominent symptoms. He completely recovered, and continued well till May, 1879, when the former symptoms reappeared, and continued till he entered hospital, Sept. 2, 1879. On examination, there were anæmia and emaciation. Pressure over the abdomen, in the region of the umbilicus, was painful. The stomach was dilated. The other signs were negative. Vomiting occurred from three to four and a half hours after eating. The fæces were small in quantity, but not accompanied with blood. He was placed on restricted diet, with nitrate of silver, one sixth of a grain, three times a day. No benefit followed the treatment.

September 6th.—Enemata of peptones were administered and retained. Milk punch was also given and not vomited

Emaciation, however, progressed; and death took place from exhaustion, September 12th.

Autopsy.—All the organs were healthy with the exception of the jejunum. An annular tumor of the intestine, about an inch in diameter, caused stenosis. The contraction was sufficiently large to admit the enterotome. The intestine above the stricture formed a dilated pouch the size of the fist. The tumor was not examined microscopically, but its annular character indicated cancer. The case was specially interesting in regard to diagnosis. The occupation of the patient, as well as the apparent recovery, pointed pretty strongly to lead poisoning. The only symptom of intestinal cancer was a point of tenderness. No tumor could be made out.

Effects of Salicylic Acid in the Reduction of Temperature.—A case accidentally occurred in hospital, through which the effects of salicylic acid in the reduction of temperature were made manifest. A boy aged six, suffering from typhoid fever, was placed on the salicylic-acid treatment. His temperature chart showed the classic typhoid evening increase with morning recess. On the day of the administration of the acid, it was, morning, 103°, evening, 104·8°. Sixty grains were taken at 7 P. M., with the following result:

August 27th.—7 P. M., temperature, 104·8°; 8 P. M., 104·5°; 10 P. M., 100·1°.

28th.—1 A. M., temperature, 99·5°; 3 A. M., 99·4°; 5 A. M., 99·1°; 7 A. M., 97·6°; 8 A. M., 96·8°; 9 A. M., 96·6°; 10 A. M., 97·2°; 11 A. M., 98·1°; 12, noon, 98·5°; 1 P. M., 98·3°; 2 P. M., 98·3°; 4 P. M., 98·8°; 7 P. M., 98·6°; 9 P. M., 98·9°; 12 P. M., 99·5°.

29th.—4 A. M., temperature, 98·4°; 8 A. M., 98·7°; 10 A. M., 98·7°; 12, noon, 99·8°; 2 P. M., 100·1°; 4 P. M., 100·8°; 9 P. M., 101·8°; 12 P. M., 100·5°.

30th.—2 A. M., temperature, 101·4°; 7 A. M., 102·5°; 10 A. M., 103·5°; 12 A. M., 103·8°.

Thirty grains of salicylic acid were then given.

30th.—2 P. M., temperature, 103·1°; 4 P. M., 103·2°; 7 P. M., 103·2°; 12 P. M., 103·9°.

31st.—2 A. M., temperature, 103·5°; 5 A. M., 103·1°; 8 A. M., 104·3; 10 A. M., 104·5°.

not think statistics showed that any better results had been achieved by it than by other dressings.

The address on Public Hygiene, by Andrew Fergus, M. D., Crown Member of the General Medical Council, was also an extremely interesting one. What public hygiene had done and what it was expected to do were the questions discussed. Regarding the future, he had been accustomed to say that, when cities were made as healthy as towns, hygiene would have accomplished all that could be expected of it. As to its past, tables were given showing a marked decrease of mortality in the past fifteen years, from most diseases, especially the acute infectious. Hygiene had, however, more or less failed in three directions. There was a very slight decrease in mortality from enteric fever; diphtheria had appeared and continued to ravage city and country; and, finally, there was an absolute increase in diarrhœal diseases. Dr. Fergus attributed these facts to the present custom of using water to absorb and carry off filth. A large part of the address was devoted to showing the danger of using this agent to dilute and remove excreta and filth.

Besides other addresses of lesser note, and the papers and discussions in the various sections, a number of reports were made. Dr. Waters, as chairman, made a report upon medical reform. He stated that efforts had been made to change the character of the General Medical Council, and secure a more direct representation of the profession therein. Parliament had not yet finished investigating the matter.

Dr. Alfred Carpenter, for the Committee on the Promotion of Legislative Restrictions for Habitual Drunkards, announced the passage of an act providing institutions for this class. As yet, admission to them was only voluntary, but it was believed that they would be the beginnings of more perfect and efficient measures.

The annual report, by Dr. Alfred Carpenter, showed that since 1867 the association had increased very rapidly, adding 00 or 500 to its membership every year. The members now umbered 7,810.

The work of the association was interspersed with many cursions and receptions, and the medical profession of Cork received the warmest praise for its hospitality and its energetic efforts in the entertainment of its guests.

The association adjourned to meet next year at Cambridge, Professor Humphrey being appointed President-elect.

Bibliographical and Literary Notes.

ART. I.—*A New Treatise on Assimilation and Digestion.* By JOHN WESLEY EVANS, M. D., Vancouver, Washington Territory.

IN these days of book-making, when every one thinks his life a failure if he has not contributed something to literature, there should be some good reason for throwing a new book upon the public. After a careful perusal of this *brochure* of 112 pages, we fail to find its *raison d'être.* The author commences by stating the modern views of physiologists on the subject of digestion. This is so much better done by Dalton or Flint that one can not but wish that he had quoted bodily from them.

There is one thing which the author claims as original, and, so far as we know, his claim is not disputed—that is that the spleen forms the gastric juice. This fact he demonstrates as follows: "I killed a hog for pork, and I had a tub of warm water and an injecting apparatus in readiness, and as soon as my butcher took the entrails from the hog I had them deposited in the tub of warm water, and had him cut the stomach open on the opposite side from the spleen, and I applied my injecting apparatus with warm water colored red. When the inner surface was laid open, I immediately saw that it was covered all over with an emanation of gastric juice, which collected in large drops and soon formed small streams; and, as it continued to flow, I soon discovered it was tinted with red, and finally it was as red as it was in the vessel from which it was taken, and equally as void of taste, which gave me conclusive proof that there is a direct communication between the vessels of the spleen and the coats of the stomach." In another place the author attributes to the liver the same function. He says: "When the spleen is inflamed and can not separate the iron from the gastric secretion, the liver fulfills the office of the spleen; and, again, when the liver becomes engorged and indurated, and can not perform the two-fold office of gall and gastric juice, the pancreas eliminates from the blood what is essential to dissolve the food." In addition to this total ignorance of the methods of scientific research, the book is full of wretched mistakes in spelling: "Submaxiliary" for submaxillary, "cellulous" for cellulose, "albuminous" for albuminose, "vena potaræ" for vena porta, "febline" for febrile, etc., etc. The chyme is described as a "muco-perulent compound," the saliva holds the food in a "muco-soluble state," the temperature in the Arctic seas is said to be "for many weeks or months in the year at 40° or even lower." Such a book placed in the hands of students would do great harm, while to the practitioner it would convey absolutely no information, and would simply consume valuable time in its perusal. The only good thing that can be said of the book is that it is well printed by the "Daily Whig" book and job printing-office, at Quincy, Ill.

Art. II.—*Typhoid Fever: Its Cause and Extent in Melbourne.* By William Thomson, F. R. C. S. Third edition, revised. One vol., pp. xxxvi.-347. 1878. Melbourne: Stillwell & Co.

The author informs us that this work on "Cause and Extent of Typhoid Fever" is based on the report of an inquiry made by special request of the Central Board of Health of Melbourne, during the fearful epidemic that prevailed there in autumn, 1874. The work is divided by the author into nine sections, viz.: 1. Preface; 2. Purpose of Inquiry; 3. Definition of Melbourne Fever; 4. Extent; 5. Conditions of Localities; 6. Time of Life most liable; 7. Influence of Season; 8. Cause—Pythogenesis or Contagion; 9. Corollary. The preface is quite lengthy, consisting of thirty-six pages, which are devoted to statistic reports, etc., as prepared by the Government statist, Mr. Hayter, and shows that the epidemic at that time must have been very grave in character. Mr.

Thomson supports the claim—as entertained by such men as Watson, Budd, Radcliffe, Paget, Huxley, Tyndall, Wanklyn, Bristowe, and a host of others—that typhoid fever is strictly a contagious disease; and that, with this view, their action has to a certain extent modified the disease, and brought it under better control. Of this pure contagion theory there are many doubters; still the doctrine of contagion in this form of fever is steadily increasing, and the time is not far distant, if not at hand, when it will be recognized as one of the settled truths of medical science. We can not but recognize the fact, as claimed by Mr. Thomson, that there is present a specific element in the disease, and that typhoid fever is propagated through the alvine evacuations, either by contamination of the water-supply, or sewer-air and a breathed atmosphere. This fact was first brought before the profession by Dr. Austin Flint, in an article on typhoid fever published in one of our leading journals. It is by no means a new idea thought out by Mr. Thomson, for it has been taught in our medical schools course after course.

Mr. Thomson also claims that decomposed organic matter or the gases evolved therefrom will not produce typhoid fever, unless specific typhoid poison has been added; that the sewage of our cities has found its way into potable waters for ages without producing any bad results; but, the instant typhoid excreta contaminated it, typhoid fever occurred. Now, if this be true, then surely there can be no truth as to the pythogenic theory, that fevers originate spontaneously. Many American practitioners, on the other hand, are of the opinion that typhoid fever is often caused by the use of water polluted with sewage-matter, or by exhalations from cesspools, etc. Now, there can be no doubt but that many times this is the case. Certainly there have been epidemics, endemics, and sporadic cases brought about in this way. Why can not epidemics of typhoid fever occur in this way, and afterward spread by contagion? These differences of opinion corroborate the fact that the question of pure contagion in typhoid fever is surrounded with difficulties; and hence we should be cautious in expressing hastily-formed conclusions on the subject. The tables prepared by Mr. Moerlin from the records of the Melbourne Observatory are really worth looking over. Nothing new in the line of treatment or prevention has been brought forward deserving special notice. There are almost too many technicalities used for general perusal. This subject is a vastly important one, and ought to be discussed more fully. We regret that time forbids a more extended review of the work. The volume has evidently been wrought up with much care, and is worthy of careful reading.

ART. III.—*The Law of Therapeutics.* By JOSEPH KIDD, M. D.

THE author of this clever little book of near 200 pages appears to be possessed with a desire to reduce therapeutics to some definite law, and in doing so he makes an ingenious effort to harmonize facts in apparently antagonistic systems of medical practice, especially the antipathic system, as propounded by Galen, and the homœopathic system, as taught by Hahnemann. Dr. Kidd evidently thinks there are grains of truth in both of these extremes, and it is his good office to absorb the good and eliminate the bad from both systems. How far he has been successful in this must, we fear, still remain an open question, notwithstanding his earnest plea for more definite laws of therapeutics. The fact is, we are not yet possessed of sufficient knowledge of the varied action of therapeutic agents to authoritatively enunciate any definite "Law of Therapeutics." To attempt such a thing in the present confused state of the literature would be to merely promulgate "doctors' opinions." One of the most dangerous sources of error is to draw general conclusions from limited observation. The tendency to such generalization can not be too strongly guarded against, and the author of the work before us has greatly weakened his argument for more definite law by such hasty and illogical generalizations. His "Ars Medica" is largely made up of individual cases, apparently prescribed for at random, after other doctors had failed to relieve them, and, what does not impress us with his honesty and candor, he rarely fails to perform wonderful cures! Each case reported is evidently intended to illustrate a universal "law of cures!" and the author's great skill as a practitioner.

Dr. Kidd, although evidently partial to Hahnemann's law of *similia*, acknowledges two general laws of cure—the one by "similars," the other by "contraries." But, like a sensible practitioner, he does not blindly follow either. He thus places himself at once in the ranks of rational medicine; for no sound practitioner of to-day can afford to reject the testimony of facts, and follow the lead of mere "system builders" in medicine.

In the historical chapter of the book the author fails to tell the whole truth about Hahnemann's law of *similia*. It is true he gave great prominence to it, and, in his zeal, made it an exclusive dogma of practice; but the law did not originate with him. It is as old as Hippocrates, and there never has been a time when medical practice has not recognized the therapeutic law in the treatment of disease. The fact is that the homœopathic system of cure is old. Modern medical science has long since observed what is good in it, and passed by it to accept the richer observations of more modern research. Altogether, while the book presents many useful and suggestive hints in regard to the treatment of disease, it is faulty in its generalizations, and well calculated to bewilder and mislead the earnest seeker after a more definite "Law of Therapeutics."

ART. IV.—*Aids to Family Government, or from the Cradle to the School, according to Froebel.* By BERTHA MEYER. Translated from the second German edition by M. L. HOLBROOK, M. D. To which has been added an essay on "The Rights of Children and the True Principles of Family Government," by HERBERT SPENCER.

THIS book attracts attention, first, because of the importance of the subject to which it is devoted. Woman unquestionably possesses in the highest degree the natural mental requirements for the management of children. Whatever her relative merits may be in other respects, in this she is vastly superior. The author of this work is, by nature, culture, and experience, well qualified for such work, and her enthusiastic interest in the subject places the reader at once in accord with her. The fact is clearly brought out that the education of children requires the highest mental qualities, and, if properly understood and conducted, affords the most congenial employment for the head and heart of any naturally constituted woman.

The author shows that much that is troublesome and unpleasant in the behavior of children is developed by those who have the care of them, and she strongly insists upon having girls taught how to care for and educate children.

The directions given regarding the care of infants are practical, and give evidence that the writer has by experience acquired a thorough knowledge of all the details of the nursery. Every child can learn as soon as it begins to breathe, and its future good habits and behavior depend largely on the lessons first taught. Taken altogether, the work has a strong claim upon the attention of all who are interested in children.

Art. V.—*Medical Chemistry, including the Outlines of Organic and Physiological Chemistry.* Based in part upon Riche's "Manual de Chimie." By C. Gilbert Wheeler, Professor of Chemistry in the University of Chicago. Philadelphia: Lindsay & Blakiston. Chicago: S. J. Wheeler. 1879. Pp. 424.

It is true, as the author in his preface states, that medical chemistry has not yet secured a separate place in American colleges. It is, no doubt, very desirable that it should have a place. But there must first be a rearrangement of the course of study. This book is intended as a text-book for medical colleges. The first half of the work is given to organic chemistry, or the chemistry of the carbon compounds. This part of the subject of medical chemistry is not treated of as well as in the text-books now in common use, notably in Fowne's work. The topics are too meagerly dwelt upon as chemical studies, and are almost valueless to the therapeutist.

In the second half of the work animal chemistry is given. This now belongs to the physiologist, and can not well or advisedly be separated from his department. Physiology now forms so important a part of the course of medical study that no such epitome of animal chemistry as is here given will ever fulfill the requirements for its mastery.

There is scarcely any excuse for making such a book as this. The cause of medical education is not advanced by it. The desire to be a voluminous and versatile author is not a sufficient motive for its compilation.

ART. VI.—*Diphtheria: its Nature and Treatment, Varieties and Local Expression.* By MORELL MACKENZIE, M. D., London. Philadelphia: Lindsay & Blakiston. 12mo. Pp. 104.

THE subject of this brief monograph has been discussed at great length in the Royal Medical and Chirurgical Society of London during the past three months. In this country so frightful have been the ravages of diphtheria that the best thought of the profession has been given to its study. Of all who have written or spoken upon this subject, no one claims greater respect than Dr. Mackenzie. The question so much discussed, "Are Croup and Diphtheria identical?" Dr. Mackenzie answers very positively in the affirmative. Our space does not permit us to notice this valuable little book as its merits deserve. The whole subject is treated in a masterly manner. It is a hand-book and guide which will repay careful study. The brief chapter on prognosis contains valuable suggestions. In the chapter on treatment, systematic feeding is spoken of as the most important part of medical treatment. This chapter is especially clear and practical.

ART. VII.—*First Step in Chemical Principles: An Introduction to Modern Chemistry, intended especially for Beginners.* By HENRY LEFFMANN, M. D., Lecturer in Toxicology in the Summer School of Jefferson Medical College, Assistant Professor of Chemistry in Philadelphia Central High School, etc. Philadelphia: Edward Stern & Co., 1879. Pp. 52. Price, 50 cents.

WE do not know of any elementary work on chemistry in which the principles are so concisely and clearly presented as in the little manual before us. It is the result of many years' experience in teaching, and has no higher aim than "to make clear, by elaborate explanation and illustration, those points in theory, notation, and nomenclature, which give trouble to beginners." We recommend it as a pocket-book to every student who is struggling with the rudiments of chemistry. It will prove a valuable guide and introduction to the larger works on the same subject.

Art. VIII.—*Hints in Obstetric Procedure.* By William B. Atkinson, A. M., M. D. Philadelphia: D. G. Brinton. 12mo, pp. 121.

"Hints" and "Hand-books" abound. Authorship is made easy. An essay is readily expanded or annotated. Printed and bound, it becomes a book. This little volume, however, has justified its existence by reaching a second edition. The practice of obstetrics has perhaps a tendency to become routine. These "Hints" will recall or suggest points of practice that every physician knows or ought to observe. The modest title of this *brochure* will tempt and doubtless reward the reader. The hints are gathered from the practice of the most accomplished obstetricians.

Art. IX.—*Harvey and His Discovery.* By J. M. Da Costa, M. D., etc. Philadelphia: J. B. Lippincott & Co., 1879. 8vo, pp. 57.

This little volume consists of an address delivered at the opening of the session of 1878–'9 of the Jefferson Medical College. In it Professor Da Costa gives an exceedingly interesting history of Harvey's life, and in connection a synopsis of the steps, actual and probable, which the great discoverer took in evolving and establishing his theory of the circulation of the blood. To Harvey and to Harvey entirely does Da Costa accord the honor of the discovery of the circulation. This honor has been denied him by posterity, but never, Da Costa declares, by his contemporaries.

Art. X.—*Practical Instruction in Animal Magnetism.* By J. P. F. Deleuze, translated by Thomas C. Hartshorn. Revised edition, with appendix of notes by the translator, etc. Samuel R. Wells & Co., 737 Broadway, New York, 1879. 12mo, pp. xxi.–490.

In this work the translator has given to English reading students the best authority upon this somewhat vaporous, g se-ous subject. Although we are not satisfied with the unqualified form of Deleuze's statements, we agree with the publisher that "If he does not bring conviction to his theory, he drives suspicion from his motives."

BOOKS AND PAMPHLETS RECEIVED.—The Heart and its Diseases, with their treatment, including the Gouty Heart. By J. Milner Fothergill, M. D., Member of the Royal College of Physicians of London; Assistant Physician to the West London Hospital, and to the City of London Hospital for Diseases of the Chest (Victoria Park); Honorary Secretary of the Harveian Society. Second edition. Entirely rewritten, with illustrations. Philadelphia: Lindsay & Blakiston.

Materia Medica and Therapeutics: Vegetable Kingdom. By Charles D. F. Phillips, M. D., F. R. C. S. E., Lecturer on Materia Medica, Westminster Hospital, London. Edited and adapted to the United States Pharmacopœia by Henry G. Piffard, A. M., M. D., Professor of Dermatology, University of the City of New York; Surgeon to Charity Hospital, etc. New York: William Wood & Co., 1879.

Analysis of the Urine, with Special Reference to the Diseases of the Genito-Urinary Organs. By K. B. Hoffmann, Professor in the University of Gratz, and R. Ultzmann, Docent in the University of Vienna. Translated by T. Barton Brune, A. M., M. D., Resident Physician Maryland University Hospital, and H. Holbrook Curtis, Ph. B. New York: D. Appleton & Co. 1879.

The Students' Guide to Diseases of Women. By Alfred Lewis Galabin, M. A., M. D., F. R. C. P., Assistant Obstetric Physician and Joint Lecturer on Obstetric Medicine to Guy's Hospital; Examiner in Physiology and in Obstetric Medicine to the University of Cambridge, etc. With sixty-three illustrations. Philadelphia: Lindsay & Blakiston, 1879.

A Treatise on Hygiene and Public Health. Edited by Albert H. Buck, M. D., American Editor of Ziemssen's "Cyclopædia of the Practice of Medicine," Instructor in Otology in the College of Physicians and Surgeons, New York; and Surgeon to the New York Eye and Ear Infirmary, New York. Two vols. William Wood & Co., 1879.

On Diseases of the Stomach, the Varieties of Dyspepsia, their Diagnosis and Treatment. By S. O. Habershon, M. D. Lond., F. R. C. S.; Senior Physician to and late Lecturer on the Principles and Practice of Medicine at Guy's Hospital. Third edition. Philadelphia: Lindsay & Blakiston, 1879.

American Health Primers—the Summer and its Diseases. By James C. Wilson, M. D., Physician to the Philadelphia Hospital, and to the Hospital of the Jefferson Medical College, Philadelphia; and Lecturer on

Physical Diagnosis in the Jefferson Medical College. Philadelphia: Lindsay & Blakiston, 1879.

Physiology and Histology of the Cerebral Convolutions. Also, Poisons of the Intellect. By Charles Richet, A. M., M. D., Ph. D., formerly Interne of the Hospital of Paris. Translated by Edward P. Fowler, M. D. New York: William Wood & Co., 1879.

A Guide to Surgical Diagnosis. By Christopher Heath, F. R. C. S., Holme Professor of Clinical Surgery in University College, London; Surgeon to University College Hospital, etc. Philadelphia: Lindsay & Blakiston, 1879. Price, $1.50.

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Vegetarianism the Radical Cure for Intemperance. By Harriet P. Fowler. New York: M. L. Holbrook & Co., 1879.

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Reports on the Progress of Medicine.

QUARTERLY REPORT ON LARYNGOLOGY.

No. XIX.

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1. *Acute Laryngeal Œdema—the First Symptoms of Nephritis*—Rauchfuss, in his article on "Phlegmonous Laryngitis" in "Gerhardt's Handbuch der Kinderkrankheiten," communicates the details of three cases (Farvel, Gibb, und Waldenberg), in which œdema of the laryngeal parts was the first dropsical appearance or symptom of kidney trouble, and dwells upon the rarity of sudden effusion of serum, especially in children. Bary's case, which follows, adds another to this rare and interesting class, and is peculiar, inasmuch as the œdema of the larynx was the sole symptom of œdematous infiltration. Patient, three and one fourth years old, admitted to the hospital February 24th, with the request that the tracheotomy which probably would become necessary might there be performed. In the middle of January the patient had a slight attack of scarlatina, following scarlet fever in her two sisters. On February 23d appeared well; on 24th sudden dyspnœa, without cough or previous symptoms. Examination at time of admission to hospital; only slight reddening of pharynx and some *râles* over both lungs; severe dyspnœa. The clinical record of the next few days shows marked and steady improvement in respiration, voice, cough, and general condition; tracheotomy at no time imperative.

8. *The Dangers of the Injudicious Use of Caustics in the Throat.*—Dr. Coomes has seen three cases in which the lesions, if due to caustics, and *not to syphilis*, certainly warrant the emphatic warning which he gives against the use of strong caustics in the throat; his experience in the matter is remarkable. In the first case the uvula and arches of the soft

palate were adherent to the posterior and lateral walls of the pharynx in such a manner as to completely close the passage between the nose and the bucco-pharyngeal cavity. A doctor had some time previously, according to the patient's story, applied some caustic agent for the relief of a pharyngitis, attacks of which he had had for many years. Nothing is said regarding any possible syphilitic history, and the nature of the caustic is not stated. In the second case nitrate of silver was used with the result of "almost closing the space between the mouth and nose." In the third the results are still more wonderful. The pharyngeal walls were found to be one mass of cicatricial tissue, the soft palate and uvula were almost destroyed, and even the "larynx had not escaped the ravages of the caustic," for the greater portion of the epiglottis had been destroyed. The previous history of the case was one of ordinary tonsillitis, and the patient's throat had unquestionably suffered much, rightly or wrongly, at the hands of many doctors. Twelve had seen her, all of whom "burned it with caustic." The query naturally suggests itself whether any of the twelve gave her iodide of potash—probably not—or the physical conditions would not have been as described, and caustics would have, in this instance at least, escaped condemnation.

11. Dale's first case of *tubercular laryngitis* possesses no points of special interest—the *ante-mortem* diagnosis does not appear to have been very clearly made. In the second case, nothing in the history given appears to warrant the assumption that the case was one of tubercular disease of the larynx. Tracheotomy was performed to relieve urgent laryngeal spasm, which was intermittent, and which had occurred occasionally prior to admission. No record of a laryngoscopic examination is found, nor did the examination of the patient's lungs reveal evidences of tubercular deposit. Dale regards the operation of tracheotomy in this instance as justifiable, on two grounds: 1. For the patient's own sake, and with the view of relieving the very urgent laryngeal spasm which frequently threatened suffocation. 2. To preserve the life of the unborn child (patient seven months pregnant).

13. *Hæmorrhage from the Carotid Artery in a Case of Phlegmonous Tonsillitis.*—A young Italian entered the hospital with an *angina tonsillaris.* On the third day the abscess opened spontaneously, and immediately one half a litre of bright-red blood poured from the mouth. Three hours later the hæmorrhage recurred, but in less quantity. No pulsation could be felt in the tonsillar tumor. A third hæmorrhage, more severe than both of the preceding together, led to the ligature of the common carotid artery, which was then severed, between two double threads. The hæmorrhage ceased. The patient presented no cerebral disturbance aside from a distinct aphonia, which disappeared in four days. In six weeks he was discharged cured.

Ehrmann completes his interesting and valuable essay with the following conclusions: 1. Phlegmonous inflammation of the tonsils can lead to abundant and spontaneous hæmorrhage, an accident likewise occasionally caused by deep ulcerations. 2. In many instances the bleeding comes directly from the internal carotid, in occasional cases from branches of the external. 3. The diagnosis of erosion of an artery before opening of the tonsillar tumor is impossible. In occasional instances pulsation of the tumor has given warning before the incision was made; in others it was not distinguishable. The rational treatment of such a hæmorrhage lies in the ligature of the carotid; and, as during life the source of the bleeding, whether from the internal or branches of the external carotid, can not be determined, the common carotid is to be preferred. The original article contains a very useful *résumé* of the whole subject, with cases; views on the source of the hæmorrhage in general diseases and local affections, which may lead to erosion of an artery; the cerebral disturbances, which may follow ligature of the common carotid, etc.

15. *Tumors of the Larynx; Death.*—Dr. D. W. Graham reports a case of tumor in the larynx in a girl eight years old. He had treated the child some months previously; had lost sight of her, and knew nothing further of the case till called to make a *post-mortem* examination. He had first seen her two years previously, and had last treated her in the November preceding .There was no evidence of an hereditary taint except as shown by the appearance of venereal warts on the person of a younger brother, whom Dr. Graham had treated. Aphonia appeared when the child was three years old, and had persisted to some degree until her death. There were no other symptoms; the general health appeared good. Iodide of potassium was given to some extent, but with no particular effect. The history given of the closing days of the case by the friends was that, about a week before death, dyspnœa came on for the first time. It did not exist to an alarming degree, and nothing seems to have been done for it. Half an hour before death a fit of severe dyspnœa came on, which persisted until from its effect life was extinct.

Large papillomatous growths were found above and below the vocal cords, covering a large part of the surface of the mucous membrane of the larynx and obstructing considerably the glottis.

There was found just below the cords a mass of quite tenacious mucus, of a size sufficient, in the event of its engaging in the glottis, to seriously obstruct respiration. Dr. Graham believes this mass of mucus to have been the cause of the final fit of dyspnœa; that it was thrown by a coughing effort against the vocal cords and abbreviated greatly the breathing space, and thereby induced the strangling.

18. *Tumors of the Vocal Cords.*—Dr. E. F. Ingals reports two cases of tumor of the vocal cords which he had removed by operation.

Case I. was a seamstress, twenty-three years old, who complained of hoarseness and some pain at times in swallowing. The larynx—including the vocal cords—was congested; and a small tumor, slightly pedunculated, was found attached to the under surface of the left cord, near its anterior extremity. Astringent powders were applied, and soon the congestion disappeared and the tumor grew less. The larynx was very intolerant of instruments.

Repeated attempts were made to seize the tumor with McKenzie's tube-forceps, with blades opening antero-posteriorly, but it was not possible to pass the blades between the cords and reach the tumor, so near was the latter to the anterior commissure. Then that part of the tumor which reached above the cords was grasped by the same instrument, the blades being turned so that they opened laterally; it was crushed, and a part of its covering was brought away. In three days there was nothing apparent at the site of the tumor but a slight prominence. In ten days the cord was normal, as was likewise the voice.

Case II. was a fibro-cellular tumor on the right vocal cord of a woman of twenty. She had had hoarseness for over a year, it having commenced in a cold. There was occasional dull pain in the larynx. The patient had received a great deal of treatment for laryngitis. A small tumor was found growing from the under surface of the right cord, near its anterior extremity. It measured at its base "about six millimetres," and at its apex half as much.

During ordinary respiration the epiglottis hung so far backward that only a part of the glottis could be seen by the laryngoscope. On uttering a high-pitched "*a*" tone the tumor projected above the cord. In this case it was impossible to grasp the tumor with the forceps opening antero-posteriorly. Accordingly, it was grasped during phonation with the blades opening laterally, and most of it was torn off. It was soft—indeed, semifluid. Five days later only a swollen spot on the cord told of the location of the growth, and a week later this was gone. The voice was then normal.

20. *Lupus of the Larynx.*—A young girl of fourteen, a sufferer from early youth from eruptions upon head and glandular enlargement. Parents healthy. At twelve and a half years had lupus of both cheeks, throat, and neck, which, at the date of Jurasz's examination, had commenced to ulcerate. The organs of chest and abdomen were healthy. Patient anæmic, otherwise appeared strong; voice rough and toneless; breathing forced, and accompanied by loud stridor. Examination of pharynx revealed marked hyperæmia of the mucous membrane; the uvula was destroyed. In the space between the arcus pharyngopalatæ and glossopalatæ upon the left side was a small tumor, easily distinguished from the tonsil by the finger; this lupoid growth was extirpated by Professor Simon, and a laryngoscopic examination became possible. The epiglottis was lost, and upon its site a long rounded cicatricial mass lay, into which merged the glosso-epiglottic folds. From it, reaching backward, two folds lost themselves in rounded tumors in the neighborhood of and involving the arytenoid cartilages. These tumefactions bounded the funnel-like opening of the larynx, the glottis corresponding to its narrowest three-cornered angle; the interior of the laryngeal cavity being irregular and uneven. During phonation, the arytenoid cartilages approached each other as well as the above described tumors, so that the glottis was reduced to a narrow fissure. From this description, illustrated in the original article by two drawings, it is easy to follow the course of the ulcerative disease from the epiglottis, of which a cicatricial node alone was left, into the interior of the larynx. The diagnosis of lupus was rendered certain by the presence of lupus nodes upon other parts of the body. Syphilis was out of the question, and the clinical history gave no clew to it. Dilatation of the strictured larynx was not permitted by the patient. Jurasz recommended the cod-liver oil treatment, and claims that it caused an improvement in the respiration.

Hæmorrhages into the Laryngeal Mucous Membrane.—Jurasz reports two cases of spontaneous hæmorrhage into the mucous membrane of the larynx. One case was that of a woman who was being faradized for paralysis of the crico-arytenoid muscles. The hæmorrhage took place into the left vocal cord; it was not preceded by any symptoms, and disappeared within a short time, without leaving any trace. In the other case, the patient was suffering from ecchymosis of the palate and buccal mucous membrane. The hæmorrhage took place into the left false vocal cord. Neither were any symptoms observed in this case, and both the hæmorrhage and the ecchymosis vanished, in the course of a fortnight, under a tonic treatment.

28. *Sea-Water in Treatment of Chronic Catarrh of the Throat.*—Mosler says that he has for some years most successfully treated patients with chronic catarrh of the throat, by gargling with sea-water. Special rooms for gargling have been erected on the sea-shore in some watering-places, according to his directions. It is, however, essential that the patients should be given special directions how to gargle. As the affection is generally located in the naso-pharyngeal space, it is necessary that part of the water should come in contact with the nasal cavity. In order to attain this, the gargling movements must be combined with movements of deglutition. A marked improvement in the state of the patient follows as soon as the latter has acquired this particular act of gargling. Patients who suffer from chronic pharyngitis, and who are exposed to much fatigue through singing, preaching, etc., have been completely cured by gargling

twice a day, for many months, with a tumbler of cold water to which is added from one to three tablespoonfuls of a 20 to 25 per cent. solution of sea-salt. To protect the teeth from the influence of the salt water, they must be cleaned immediately after the gargling with a tincture prepared by the author. Another of the advantages of this method is that the disposition to relapse gradually decreases, especially if the patients be directed to wash their faces, necks, and forearms with cold water, and rub them dry before gargling, in the morning and at night. After this has been kept up for some time, the mucous membrane of the pharynx and nasal cavity changes entirely, and the disposition to diphtheria, which predominates in certain families, is greatly diminished.

80. *Complete Pharyngeal Stricture.*—A man thirty-three years of age had a chancre three years ago, followed by eruptions of secondary syphilis, which got well under mercurial treatment. For the past year he had no specific trouble of any kind, and no treatment, until December 25th. He then began to complain of a sore throat, which, with ordinary remedies, got no better, but rapidly worse. On the 10th of January he presented himself to Professor Oertel at his clinic, when, upon examination the posterior wall of the pharynx and sides of the pharynx and uvula were inflamed, reddened, and infiltrated; on the uvula, beginning ulcerations were noticed, also on the surface of the tonsils. At this time a gargle was ordered, and he was asked to call again in a few days. Professor Oertel having been called out of town on the 13th of January, the patient did not again present himself till the 15th, when he was brought into hospital in a dying condition, almost suffocated, with intense dyspnœa, breathing long and wheezing, inspirations 10-12 per minute, pulse almost imperceptible, surface of body cold, face and hands cyanosed, and almost voiceless and speechless. Examination by Professor Nussbaum gave little satisfaction, simply showing an occlusion of the laryngo-pharyngeal [illegible] by a stricture, ulceration of posterior pharyngeal wall in a reparative condition, uvula drawn to right pillar of pharynx and there attached, and perforation of soft palate. What condition the larynx was in could not be determined; opening through which he breathed could not be seen. It was supposed that the ulcerative process had destroyed the epiglottis and closed the upper portion of the larynx. The indication was tr otomy, which was immediately performed by Professor Nussbaum, prompt relief to the patient, so that he was able to leave the hospital few days, after having been put on mixed treatment. On the 2 January he again presented himself to Professor Oertel for further t ment. Examination showed an almost complete stricture of the ph extending from the base of the tongue to the sides and posterior w the pharynx, a small opening, not even admitting a probe, a little t left of the center of the stricture, which formed a sort of lid o larynx and œsophagus. Through this small opening the patient too and breathed. Posterior wall of pharynx of an ash-gray color, pre an arch-like appearance. No more ulcerations; soft palate perfora uvula attached to right side of pharynx. Patient wore a trache now only had occasional attacks of dyspnœa, with an occasional d and coughing when he attempted to swallow quickly. He co take liquid food, but sufficient to sustain him. Opinion of Pr Oertel was same as that of Professor Nussbaum, that epiglottis w stroyed and upper portion of larynx was closed by the stricture. tion of vocal cords not known; how larynx closed during deglu for food and air passed through the same small opening—was not Meyer thought, and Professor Oertel agreed with him, that during th deglutition the base was lifted and drawn backward in such a wa approach post-pharyngeal wall, bringing the small aperture over th

phagus, at same time closing the larynx, the closure being aided by the aryteno-epiglottidean folds, which, although they could not be seen, were supposed present. Its function was known to be replaced by those folds, and in my opinion aided by the tongue (base) approaching the pharyngeal wall. Professor Oertel proposed to operate, to dilate the opening with a knife. Sounds were passed every other day to get the patient used to an instrument, till February 10th, when the first operation was performed. An incision was made forward toward the tongue; bleeding was slight; he was ordered to gargle cold water. At this time it was noticed that he could gargle more easily. When he was asked if it pained him, he said "only a little" so distinct that everybody present understood him, he having been almost voiceless and entirely speechless. This operation was followed by two more on the 13th and 18th of February, two lateral incisions then having been made; opening would then admit a finger. Examination after second operation showed, to the astonishment of all present, that the larynx was perfectly intact, epiglottis was entire, vocal cords were normal. He could now breathe without the tracheal tube, deglutition was no more interfered with, and the patient rejoiced in the fact that he was again able to drink lager-beer.

The principal points of interest in this case are the completeness of the stricture, its seat, the rapidity of the ulcerative process, the rapidity of the reparative process at the time without specific treatment, and the larynx being perfectly intact.

31. *The Etiology of Paralysis of the Crico-Arytenoid Posterior Muscles.*—Ott contributes an interesting case of paralysis of the posterior crico-arytenoid muscles, which was due to pressure of the posterior crico-arytenoid nerves. A man, aged fifty-seven, had swallowed a large piece of meat, which had stuck in his throat for twenty-four hours, and resisted all his attempts to dislodge it. He had no pain, only slight dyspnœa, and was unable to swallow even a drop of water. The next day he consulted a physician, who pushed down the piece of meat with a sound. The patient felt better directly, could breathe more freely, and was able to swallow. This state of things, however, did not last long; he again began to suffer from difficulty in breathing and swallowing, and was obliged to take only liquid food. The voice had remained unaltered; but the patient was obliged to speak in short abrupt sentences, from want of air. When examined by the writer, it was found that the false vocal cords were slightly swelled, and red; there was a space of four millimetres between the arytenoid cartilages. The rima glottidis was partly covered by the vocal cords during inspiration and expiration; only an irregular triangular opening could be seen at its posterior end. The left vocal cord was wider than the right, and did not move at all, while the right moved sluggishly. During inspiration, the vocal cords were approximated. The arytenoid cartilages did not move either during respiration or phonation. The mucous membrane of the incisura inter-arytenoidea was swelled and pale, and the color of the vocal cords a dingy yellow. The treatment consisted at first in faradization of the larynx, but it afforded no relief to the patient. The dyspnœa increased, and became most severe even when the patient was perfectly quiet. It was noticed that the rima glottidis had become much narrower, the left vocal cord having advanced to the middle of the fissure; the right arytenoid cartilage was partly hidden by the left. As the patient could only swallow with difficulty, it was necessary to feed him through the tube. He lost his appetite, and was very much wasted, and reduced in strength. At last the dyspnœa became so intense that tracheotomy had to be performed, to save the man's life. Immediately after the operation, the patient was able to swallow without any trouble, and continued to do so henceforth. The larynx presented the same

changes as before the operation. The patient had still great difficulty in breathing; the thorax was immovable during respiration, and the intercostal spaces were drawn in. The vocal cords were immovable, and during phonation a space of about three millimetres remained open in the back part of the fissure. For this reason, the patient had to be dismissed with the canula in his throat, to prevent asphyxia. The author attributes the paralysis of the muscles which open the glottis to the pressure which the large piece of meat, that was firmly wedged in the pharynx during twenty-four hours, must have exercised on the crico-arytenoid posterior muscles and their nerves. His assertion is based upon the well-known fact that the conducting function of a nerve is entirely destroyed by pressure. Thus, in the present case, the nerve having lost all control over the muscle it governs, the latter became paralyzed, and gave rise to the phenomena we have described. The difficulty in swallowing, which increased whenever the dyspnœa became worse, decreased when the sound was introduced, and finally disappeared after tracheotomy, can only be explained by assuming the existence of a spasmodic stricture of the œsophagus.

32. In a recent communication Dr. O'Toole says that during the past three years, and while engaged in the throat department of an extensive clinic, he has dispensed with any assistance from patients in holding or controlling the tongue during laryngoscopic operations.

By exercise and training of the fingers of the left hand, it is not difficult for the operator to control the tongue, and at the same time to hold the throat-mirror in position with these fingers.

The manœuvre, as practiced by him, is as follows: The throat-mirror, heated, is held in the right hand; the tongue is grasped with and between the ring and little fingers of the left hand; the mirror is then placed in position and held between the thumb, index, and middle fingers (of the same hand), precisely as a cataract-knife is held during operation.

As there is naturally little strength of grasp or unity of action between the ring and little fingers, some exercise and practice of these digits will be required so as to enable them to hold the tongue.

The ability to use the fingers in the manner indicated will, of course, give the operator the great advantage of having his right hand free for the use of instruments.

34. *Pharyngeal Applications.*—Rumbold in a paper upon this subject describes the various forms of atomizers most appropriate to different cases, as well as the methods of procedure employed successfully by himself. A favorite formula for atomization is as follows: ℞. Vaseline, ℥ ij; glycerine, ʒ ij; carbolic acid, ♏ x. This should be warmed before application. It is not unpleasant to the taste, and has a very soothing and agreeable effect. It should be applied once in from two to six hours.

36. In the course of a very readable little essay upon the subject of "Adenoid Vegetations of the Naso-pharyngeal Region," Dr. Roe summarizes the question of treatment as follows: "The treatment of these growths is divided into local and general. The association of these growths with the lymphatic temperament is so frequent that more or less general treatment is usually called for. It should consist in good hygiene, plenty of exercise in the open air, cold sponge- or sea-baths, and cod-liver oil, bitters, iron, and iodine preparations if required. All irritants, as too hot or cold food, alcoholic liquors, tobacco, bad air, and excessive use of the voice, should be avoided. In cases where there is no diathesis to combat, only the injuries done by the presence of the tumor have to be counteracted.

"The *local* means employed are ablation and cauterization. The method usually employed for ablation is by crushing by means of forceps with strong blades curved at a proper angle to pass up behind the palate; the curette, as used by Loewenberg, consisting of a spoon-shaped blade with cutting edge, and attached to a handle by means of a slender shank; the *écraseur*, as recommended by Maisonneuve and Wilde; and the cutting forceps, as devised and used by Fauvel, Stoerck, and Cohen. These cutting forceps are often very convenient as an expeditious means of removing small growths. There is but little danger of injury resulting from their use, as whatever adventitious tissue is found in the vault is legitimate prey. Meyer has recommended an annular knife to be passed through the nostril, by which he scrapes off the tumors. This, however, is only applicable in cases of large vegetations.

"Since the introduction of the galvanó-cautery into the treatment of these growths by Voltolini in 1867, it has been fast superseding all forms of caustic applications and operative procedures. Its advantages over all other methods are very great, due to the rapidity and effectiveness of its action, and the avoidance thereby of hæmorrhage, which in the cutting operations is frequently very profuse and exceedingly troublesome, owing to the great vascularity of the parts.

"The cautery can be used in two ways, according to the variety of the growths. For those who are pedunculated, the platinum-wire loop passed through the nostril and around the tumor is best adapted; and for the sessile variety the curved electrode devised by Lincoln, which is passed up behind the palate, in the end of which is a coil or disk of platinum protected from injuring the surrounding parts by a shield, and is made to fit Leiter's handle. Roe has recently had an electrode made with the stem coated with asbestos, which protects the parts entirely in case the stem becomes heated.

"In some cases a simple hook for holding the palate is all that is required; but in cases of muscular and rigid palates, where gagging is easily induced, the most reliable retractor he has found to be two soft tapes passed through the nostrils and out of the mouth and tied over the upper lip in front, as suggested by Dr. Cohen; or a rubber cord used in a similar manner, as proposed by Dr. Wales. By thus drawing the soft palate forcibly forward the shield can to advantage be dispensed with, and by means of the rhinoscopic mirror the entire operation can be performed under sight; and it can readily be seen when the entire destruction of the growth is accomplished. Ordinarily, the use of anæsthetics is unnecessary, as the pain attending the operation is not great; but in some cases of nervous patients or very irritable throats they are advisable and occasionally indispensable. The battery which he uses is Dawson's, manufactured by George Tiemann & Co., which with Leiter's handle leaves but little to be desired for a perfect cautery apparatus."

87. *The Larynx in Croup.*—In this paper Schaeffer gives the detail of several cases of "croup," with special reference to the observed existence of false membrane. His observations lead him to the same conclusion with Baginsky, viz., that the dyspnœa of croup is to be explained as arising from purely mechanical causes. The author lays down the proposition that the dyspnœa increases in relation to the extension and thickness of the membrane, which naturally would render a child's larynx impermeable sooner than that of an adult.

89. *Chancres of the Tonsils and the Buccal Cavity.*—M. Spillmann has published, in the "Revue Médicale de l'Est," two cases of chancre which are very remarkable, both for the peculiar circumstances attending the infection, and for the difficulty of making a diagnosis.

The first was that of a lady, aged fifty-nine, whose position in life was such as to exclude all suspicion of syphilitic infection. She consulted M. Spillmann for a slight sore throat which she had had for about a fortnight, the pain being more violent during the act of swallowing. There was also a considerable swelling of the glands at the angle of the right maxilla. On examination of the throat, a wound of the size of a threepennypiece was seen on the surface of the right tonsil, slightly depressed, and of a grayish hue. The mucous membrane around it was œdematous, and the parotid glands enlarged and tender to pressure. No other lesion could be discovered either in the mouth or throat, nor was there any external redness of the skin. The patient herself did not complain of any particular feeling of ill health, and seemed to consider her disease as a very trifling matter. M. Spillmann, who was well acquainted with his patient's way of living, could not conceive the existence of syphilis; but, a few days later, the characteristic syphilitic rash broke out, so that there could be no doubt as to the nature of the affection. The only difficulty to solve was the etiology of the case, and, after a great deal of trouble, it was discovered that the patient had adopted a baby which she was bringing up by hand, and that, in order to see if the temperature of the milk in the feeding-bottle was right, she often used to try it by drinking from the rubber mouthpiece. The infant, being examined, was found to be suffering from hereditary syphilis, with ulcerations of the mouth and the genital parts.

The second case is not less interesting respecting the way in which the infection had been communicated. An upholsterer's apprentice, aged thirteen, had had for some days previous to his consulting M. Spillmann a small red patch of the size of a threepennypiece on the lower lip; this patch was indurated at the base, the glands were enlarged—in short, it was an undoubted chancre of the lip. It seemed impossible at first to discover the cause, when it was discovered that the boy used to work with a man who was suffering from syphilis, and took his nails from the same bag as this man. Upholsterers, it seems, are in the habit of putting into their mouths handfuls of the small nails which they use for their work, putting back the surplus nails into the bag. The workman was examined and found to have syphilitic patches in the mouth, and there can, therefore, be no doubt that the boy was infected by putting into his mouth nails which were impregnated with the saliva of this man.

40. Schroetter communicates the history of an interesting case of fibroma of the larynx, of such a size as to cause urgent dyspnœa; the greater part was removed with a curved knife, and the patient, who was pregnant, discharged. Some months later she reappeared; the growth had meanwhile increased in size; the same operation as before only partially succeeded; at the same time an abscess formed externally upon the throat, opened, and discharged. Patient died with the symptoms of pneumonia and jaundice; the autopsy showed cancer of the throat. The noteworthy points of the case are: 1. The development or recurrence of the original fibrous tumor into or as a carcinomatous one; and 2. The difficulty of treatment, which might warrant extirpation of the larynx.

42. *On the Operation and Indications for Laryngotomy, with the Description of Four Operated Cases.*—After a short retrospect of the literature of the question, the author critically reviews the scientific war which has long been waged between the surgeons and the laryngologists concerning the proper indications for the above operation, and endeavors, in the light of his own experience and that of recent observers, to squarely fix the limits for a laryngotomy and for endo-laryngeal operations. He prefers to perform laryngotomy without anæsthesia, mainly because the pain is less than in tracheotomy, the sensibility of the laryngeal mucous membrane only lasting for a short time after the larynx is opened, and finally because, if anæsthesia be employed, a preliminary tracheotomy will be necessary, through the wound of which ether may be administered. The halves of

the thyroid should not be held apart with sharp hooks, and should be brought together with stitches passing only through the perichondrium and not through the cartilages. In the latter case pus will enter both larynx and trachea. The fear of hæmorrhage is exaggerated, the larynx not being opened until it be controlled. The assertion that the voice is lost after thyrotomy is denied by the writer, who claims that after endo-laryngeal operations also hoarseness often remains. He admits that the limits laid down by Hueter some ten years since for the efforts of the laryngologist can now be enlarged, especially in cases of foreign body in the larynx, and benign growths. In the latter cases, thyrotomy is not indicated until endo-laryngeal means have failed. The size of the larynx in children—a contra-indication raised by Schroetter against laryngotomy—is in reality none. Fialla has performed it with success upon a child of five, Czerny upon one of seven, and Szeparowicz himself upon one of nine years.

Mechanical difficulties in endo-laryngeal treatment, from various causes, such as the small larynges of children, multiple growths, etc., are all, according to the writer, indications for a laryngotomy.

With malignant growths, endo-laryngeal measures are not to be thought of. The proper procedure lies between a laryngotomy and extirpation of the larynx.

Cicatricial stenosis of the larynx is left to the laryngologist, thyrotomy being compared, not inaptly in such cases, to an external urethrotomy.

CONTRIBUTED BY DR. G. R. CUTTER.

SURGERY.

Sudden Death following Severe Burns.—Dr. Ponfick noticed, in experiments on dogs, in all cases, that soon after extensive burns the red-blood globules were disintegrated into an infinite number of colorless particles, which soon disappeared in the blood, but provoked disturbances especially in the spleen, kidneys, and the medulla of the bones. When hæmoglobine was found circulating freely in the blood of the kidneys, it was separated; but then the renal parenchyma became inflamed. The author proposes, theoretically, the transfusion of blood in severe burns, to compensate for this great and immediate destruction of red globules.—"Berl. klin. Wochenschr.," and "Ann. Univ. di Med. e Chirurgia," No. 2, 1879. G. R. C.

Total Extirpation of the Parotid.—In an interesting paper read before the Finland Medical Society, Professor J. A. Estlander stated that the entire parotid gland had rarely been removed. Though the operation has many opponents and is difficult, it is, nevertheless, necessary and proper in certain cases, notwithstanding the danger of wounding important nerves and vessels. Though the complications which sometimes accompany the operation are unpleasant, they are not so permanent as many suppose. Estlander has had some of the patients under observation for twenty years or more, and found their condition very much improved. Notwithstanding the fact that all the branches of the facial nerve are severed in the gland, the patient has a certain power of contraction in the sphincter muscles of that side. Tumors may be removed from this region just as well as from others. In performing the operation, it is recommended not to ligate the carotid primarily. The cutaneous incision should be made so as to prolong it, if necessary, and then ligate the arteries. By prolonging the incision farther downward than is actually necessary, the advantage is gained of rendering the lower border more free and accessible, so that the position of the carotid and its relation to the tumor may be ascertained. The capsule of the tumor should be protected, so that the latter may be removed as a whole. First loosen the tumor at its lower border and sides, and gradually work upward; the upper portion usually presents the greatest difficulty. The bleeding from the branches of the external carotid is about the same whether the carotid is ligated or not. It is usually found that a tumor which can only be removed at the commencement with the knife and scissors, is later more accessible, and can be loosened with the fingers and the handle of the scalpel, and without coming in collision with the carotid.—"Hospitals-tidende," January, 1879. G. R. C.

Three Laparotomy Operations in Three Years on the same Subject.—Dr. Baumgärtner, of Baden Baden, reports ("Berlin klin. Wochenschr.," February, 1879) a unique case. The first operation, September, 18[illegible], was for the removal of a cyst of the left ovary, followed by a rapid recovery. The second operation, March, 1877, was necessitated by the adhesion contracted between the pedicle of the tumor, the abdominal parietes, and the wall of the bladder, which impeded the evacuation of the urine. The operation was completely successful. Finally, in August, 1878, a third laparotomy became necessary for the removal of the right ovary, which had also become diseased, and was successful.—"Jour. des Sciences Méd. de Louvain," No. 4, 1879. G. R. C.

PHYSIOLOGY.

Congenital Absence of the Spleen.—Drs. Koch and Wachsmuth, of Altona, report ("Berlin klin. Wochenschr.," February, 1879) the case of a man, forty-nine years of age, who had typhoid fever. Desiring to confirm the diagnosis by percussion of the spleen, no dullness could be detected in the region usually occupied by this organ. At the autopsy, no trace of the spleen was found. The splenic artery was also absent. The other abdominal organs were of normal conformation.—"Hospitals-tidende," No. 11, 1879. G. R. C.

The Fat secreted by the Liver.—According to Dr. Neumann, the liver furnishes a variety of fat, which is distinguished from others by the rapidity with which it oxidizes to serve for nutritive purposes. This fat, like glycogenic substances, is the result of the transformation of albuminoids. The production of fat in the liver is comparable to that which occurs in the mammary gland, and is a true secretion. Its activity is in an inverse ratio to the oxidations which take place in the organism. Everything which tends to limit these oxidations promotes the production of fat in the liver (pulmonary lesions, debilitating influences, anæmia, and cachexia). In such cases, the liver at last becomes infiltrated with fat—a condition which is physiological in animals in which the respiratory functions are languid (fishes). When, under the influence of debilitating causes, the wants of the organism increase to a high degree, the liver does not suffice for these excessive demands; the fat-forming function becomes paralyzed. The albuminoid matters, undergoing metamorphosis in the liver, no longer produce fat, but a substance less adapted for combustion—amyloid substance—is formed. It is true that amyloid degeneration of other organs may precede that of the liver, but this is due to the fact that the diseased liver pours into the circulation the morbid products, which [illegible] infiltrate the tissues with which they come in contact, and especially the parietes of the smaller vessels.—"Deut. Arch. für klin. Med.," and "[illegible] Intern. delle Sci. Med.," Nos. 3 and 4, 1879. G. I

OBSTETRICS.

Gingivitis of Puerperal Women.—It is known that during pregnancy the gums frequently become red and congested; a slight pressure on them is sufficient to cause a moderate hæmorrhage. At a more advanced stage the teeth lose their solidity, become movable, and may be spontaneously shed from the alveolar cavity. Mastication is rendered difficult, but never causes such pain as is common in alveolo-dental periostitis. In examining the cause of this gingivitis, Dr. Pinard states that Delestre, in his thesis, lays stress on the congestion, tumefaction, and softening of the gums during menstruation, which proves that the functional activity of the ovary and uterus may react on the organs of mastication, and predispose them to congestion and inflammation. Previous pregnancies and a bad general condition seem to exert a great influence as predisposing causes.

This affection (puerperal gingivitis) ordinarily appears after the fourth month of pregnancy, and tends to disappear naturally a month or two after parturition. The local treatment consists in touching the diseased parts with a more or less concentrated solution of iodine, with glycerolate of tannin, chlorate of potash, chromic acid, etc. The local treatment which appears most efficacious, however, and is always crowned with success, is the daily application to the healthy and diseased margins of the gums of lint dipped in a solution of chloral and tincture of cochlearia, equal parts. —"Virchow's Jahresbericht," and "Giorn. Int. delle Sci. Med.," Nos. 3 and 4, 1879. G. R. C.

PATHOLOGY.

Fatty Degeneration of the Diaphragm as a Cause of Instant Death.—Frequently, persons affected with emphysema, bronchial catarrh, slight degenerations of the miocardium, die suddenly without new complications. At the autopsy are found emphysema, a pulmonitis, bronchial catarrh, hyperæmia of the lungs, some hypertrophy of the heart, with slight fatty degeneration, but nothing sufficient to explain the death. Dr. Zahn has found in similar cases fatty degeneration or thinning of the diaphragm, and maintains that these alterations are sufficient to explain the instantaneous death from asphyxia.—"Virchow's Archiv," and "Giorn. Intern. delle Sci. Med.," Nos. 3 and 4, 1879. G. R. C.

Miscellany.

Sanitas, the New Disinfectant.—We have given this new disinfectant a sufficiently extensive trial to be satisfied that it possesses great merits, and is worthy of a place beside the most popular disinfecting agents now in use. Granting that its disinfectant powers are equal to those of other preparations, it has the great advantage of a pleasant odor, of not being a poison, and of not injuring clothing, furniture, etc., with which it is brought in contact. There is no secret about its manufacture. Russian turpentine and water are placed in huge earthenware jars, surrounded by hot water. Air is driven through the mixture in the jars continually for three hundred hours, the result being a decomposition of the turpentine, and the formation of a watery solution of the substance, to which Dr. Kingsett, the discoverer, has given the name of "Sanitas." After evaporation, the substance, as sold in tin cans, is a light brown powder, of a pleasant taste and odor, and capable in a very remarkable degree of preventing or arresting putrefactive changes. It has been in use for some time in England, and is now being introduced here, the agents trusting chiefly to its own merits to recommend it. It may be obtained in this city of William Bauer, 340 Third Avenue.

The New Marine Hospital on Bedloe's Island.—This island was turned over to the Marine Hospital Service by the Secretary of War about the first of August, and a hospital is now established there and in full running order. The island is several acres in extent and has upon it a number of buildings once used for barracks and other purposes. These buildings are being utilized until new ones are built. The Marine Hospital Service treats about 2,500 cases at this port during the year, and the hospital will accommodate 200 or 250 patients. Records kept by the War Department show that the island was one of the healthiest of all the army stations. A very bad case of stricture with extravasation of urine of a week's standing, operated upon by Assistant Surgeon W. H. Heath, is reported as recovering. Lister's method will not be adopted at present.

The Social Science Association.—This Society held its annual meeting at Syracuse on September 11th, 12th, and 13th. Many papers of interest to the medical profession were read. Among them were the following: "Adulterations in Food and Drink," by Mr. Angell; "International Coinage, Weights, and Measures," by President Barnard, of Columbia College. This paper contained a strong argument for the adoption of the metric system. "The Sewerage of Village Cities," by Colonel George E. Waring, Jr., of Newport

"The Sanitary Condition of Tenement Houses," by Dr. Charles P. Russell, of New York; "The Tenement House and its Latest Improvements," by Charles T. Wingate; "Yellow Fever," by Dr. White.

Paracentesis Pericardii.—Dr. John B. Roberts ("Philadelphia Times") revives the question of paracentesis pericardii, and claims that it is both justifiable and obligatory in some cases. He has collected forty-nine cases in which the operation was performed. Of these, twenty-three recovered and twenty-six died. A case reported by Dr. Pepper in the December number of this Journal is cited as an especially brilliant example of the success which may be attained. The operation is particularly called for in cases in which sudden serous effusion of great amount has occurred in articular rheumatism. The point to be chosen for insertion of the needle is in the fifth space, about one and a half inch from the middle line of the sternum.

The Yellow-Fever Epidemic in 1878 and 1879.—The comparative mildness of the present epidemic is shown by the following figures: In New Orleans in 1878 the first case was reported about July 25th; by August 31st there had been 2,877 cases and 867 deaths. In 1879 the first case occurred on July 28th, and up to August 31st there had been 10 cases. In Vicksburg there had been, up to August 27th, 800 cases, all occurring within the previous two weeks. This year there have been no cases so far. In Memphis the first case appeared July 30th; for the week ending August 29th there were 721 cases and 241 deaths. In 1879 the first case was reported July 5th, and for the week ending August 24th there were 148 cases and 38 deaths.

Chloride of Barium in Internal Aneurism.—Dr. F. Flint reports in "The Practitioner" a very favorable result from the use of this drug in a case of abdominal aneurism. The patient was a lady aged sixty-five. Upon the appearance of the aneurism she was put to bed and given Tufnell's diet, but without good results. Chloride of barium was then given in gr. 1/8 to gr. 2/8 doses three times a day. Much improvement took place within a fortnight, and at the end of five months there was practically a cure. Chloride of barium is in small doses a vascular stimulant, and seems to give tone to the muscular coats of the arteries. In larger doses of ʒj and upwards, it depresses and paralyzes the heart.

The American Gynecological Society.—Just as we are going to press we hear that the fourth annual meeting of this Association, held in Baltimore September 17th, 18th, and 19th, was largely attended, and in every way highly satisfactory to all concerned. Dr. T. Gaillard Thomas, President, delivered an eloquent and forcible address, taking for his theme "The Gynecology of the Future, and its Relations to Surgery." Many of the papers read were of marked ability, and it was found impossible to do justice to all in the short time at the disposal of the Society. Dr. J. Marion Sims was elected President for the ensuing year, and Cincinnati was chosen as the next place of meeting.

Free Quinine.—The abolition of the duty on quinine has caused a stoppage of its manufacture in this country. The consequent increased demand upon the manufacturers abroad and the fact that the duty still remains on the cinchona barks have led to a general rise in the price of the drug in Europe, and the great fall that was expected in the price here has not yet taken place. There is consequently some dissatisfaction, which is being taken advantage of in order to produce a reaction in sentiment favorable toward the duty. It is probable, however, that a little patience and the removal of the duty on the barks will eventually secure cheap quinine.

Pitch Ointment in the Treatment of Hæmorrhoids.—A writer in "The Practitioner" praises very highly the use of common pitch ointment as a remedy for what he calls chronic hæmorrhoids. It often prevents the necessity of operative procedure. Its astringent effect is something remarkable, and nothing, he says, acts so quickly and effectually. With it may be used a euönymin pill at night, and Carlsbad salts in the morning. It may be remarked that hæmorrhoids are never long without a new specific. A little while ago it was glycerine; then it was witch-hazel, then carbolic-acid injections, and now we have the unguentum picis.

Reversal of Dr. Hammond's Sentence.—The Secretary of War, to whom Dr. Hammond's case was referred, has reported that the charges of corruption and of falsehood against him are not sustained; that in purchasing medical supplies in person instead of through a purveyor, he was not guilty of committing any crime. It was recommended that the finding and sentence in the case be annulled and set aside; and that Dr. Hammond be placed on the retired list of the army, without back, present, or future pay. This report has been approved by the President.

College of Physicians and Surgeons, New York.—We have been favored by Dr. J. G. Curtis, Secretary of the Faculty of this College, with a copy of the improvements adopted by the Faculty and Trustees in regard to the methods of examination of candidates for the degree of Doctor in Medicine. The new regulations appear eminently judicious, and will insure a much more thorough and practical examination than has hitherto been required.

A Medical Temperance Association.—A society has been formed in London, including a number of prominent men, the objects of which are to promote total abstinence among medical men and to encourage investigations as to the precise action of alcohol in health and disease. It admits all registered medical practitioners who may be regarded practically as abstainers from alcoholic drinks. The members are not required, however, to sign any pledge.

Private Hospital for Insane.—Dr. Walter Channing, formerly assistant physician to the Lunatic Asylum in Auburn, New York, has opened a private institution for the treatment of the insane, in Brookline, Mass. The house is delightfully situated and provided with everything that can contribute to the welfare of the class of patients for whom it is intended, and to whom Dr. Channing purposes to devote his entire time and attention.

"Chicago Medical Journal and Examiner."—Drs. F. C. Hotz and E. F. Ingals have retired from the editorial staff of the above journal. Their places are filled by Dr. N. S. Davis, Dean of the Faculty of the Chicago Medical College, and by Dr. D. R. Brower, one of the Faculty of the Woman's Hospital Medical College of Chicago.

Cantharidin from the Potato Bug.—According to the "American Journal of Pharmacy," there is 1¼ per cent. of cantharidin in the potato bug. This fact, taken with that of the recently discovered diuretic properties of the cockroach leads us to expect soon a monograph on the therapeutic uses of domestic vermin.

Lectures on Diseases of the Skin.—Dr. Bulkley will give a third course of lectures on "Diseases of the Skin" in the pathological amphitheatre of the New York Hospital on Wednesday afternoons, from 2.30 to 3.30, beginning October 8th. The course will consist of twenty-four lectures, and will be free to physicians and medical students.

Surgeon-General of the Navy.—The President has appointed Surgeon Philip S. Wales Surgeon-General of the Medical Department of the Navy. Dr. Wales was formerly Medical Inspector, and had recently served on several examining boards.

Antivivisection.—The bill presented in the House of Lords for the total abolition of vivisection, and supported by a large memorial, has been defeated by a vote of 81 to 16.

Decrease of Medical Practitioners in France.—In 1847 the doctors and *officiers de santé* of France numbered 18,099; in 1853, 18,052; in 1866, 17,039; in 1876, 14,376.

A State Medical Prize.—The Baltimore Academy of Medicine has offered $100 for the best essay on a medical subject to be written by a physician residing in the State of Maryland.

Koeberle's Ovariotomies.—During the last four years, M. Koeberlé has performed 100 ovariotomies, with 17 deaths

He ascribes his success largely to cleansing the peritoneal cavity with carbolized water.

Bellevue Hospital Medical College.—The following changes have been made in the requirements for graduation at this college:

Resolved, That, after the regular session of 1879–'80, the plan of instruction at the Bellevue Hospital Medical College be so modified as to apportion to each one of three sessions certain divisions of the study of medicine, with final examinations in elementary branches at the end of the first and of the second session; the examinations for graduation at the end of the third session being confined to the branches of Practice of Medicine, Surgery, and Obstetrics; the plan to embrace requirements as regards practical instruction in Chemistry, Histology, Operative Surgery, and Clinical Medicine, together with systematic recitations in all the branches.

In adopting this plan, the number of hospital lectures is not to be diminished, and the union of clinical with didactic teaching is to continue, as heretofore, to be a leading principle in the practical departments.

Resolved, That matriculants who expect to become candidates for graduation after the close of the session of 1879–'80 will be required to furnish, by examination or otherwise, satisfactory evidence of a preliminary education deemed sufficient for entering upon the study of medicine.

On September 8, 1879, the following plan was adopted by the Faculty, subject, however, to modifications in its details, should any changes appear advisable before it actually goes into operation:

Matriculation Examination.—The matriculation examination will consist of English composition (one foolscap page of original composition upon any subject, in the handwriting of the candidate); grammar, an examination upon the above-mentioned composition; arithmetic, including vulgar and decimal fractions; algebra, including simple equations; geometry, first two books of Euclid.

The matriculation examination by the faculty will be waived for those who have received the degree of A. B., those who have passed the freshman examination for entrance into any incorporated literary college, those who present certificates of proficiency in the subjects of the matriculation examination from the principal or teachers of any reputable high school, those who have passed a matriculation examination at any recognized medical college, or at any scientific school or academy in which an examination is required for admission, and those who present certificates of having passed the matriculation examination from certain examiners appointed by the Faculty of the Bellevue Hospital Medical College.

Examinations for Students who take the full Course of Three Years.—First year—Physics and Inorganic Chemistry; Descriptive Anatomy; Materia Medica. *Second year*—Organic and Physiological Chemistry; General and Surgical Anatomy; Physiology; Therapeutics. *Third year*—Practice of Medicine; Surgery; Obstetrics and Diseases of Women and Children. Before the final examinations for the third year, candidates must present certificates from recognized teachers of one course of instruction in each of the following-named practical studies: viz., Dissections, Practical Chemistry, and a Practical Course of Physiological and Pathological Histology. No graduating thesis is required.

Candidates who fail in one only of the branches for examination for the first or second year will be permitted to pass on to the studies of the succeeding year, and to make up the branch upon which they failed in their previous examination. Candidates who fail in more than one branch in the examinations for the first or second year will be put back one year; but they will not be required to pay more than the regular fees for the three years.

Graduates of other recognized medical colleges, and students who have attended two full courses of lectures at other recognized medical colleges, or two full years at other recognized medical colleges that have a compulsory graded course, will be admitted to the third year without a matriculation examination; but all such as are candidates for graduation will be required to pass a full examination upon all the branches examined upon for the three years at the close of the session; and all, including graduates of other medical colleges, irrespective of the date of their graduation, will be required pay the fee for the third year, which is $100.

Students who have attended one full course, or the year of a compulsory graded course at other recognized medical colleges, will be admitted to the second year; but all will be required to submit to the conditions of the matriculation examination, and to pass, at the end of the session, examination upon the branches examined upon for the and second years.

Partial or incomplete courses at other recognized medical colleges will be reckoned as time of study, but will counted as entitling students to enter for the second or third year, or be considered in reduction of fees, except two partial courses at other recognized medical colleges together are equivalent to one full course, will be recognized as a full course of lectures.

Certificates of three years' study after eighteen years of age, from a regular physician, in good standing, in accordance with one of the provisions of the charter of the College, will be required, and candidates for graduation must have reached the age of twenty-one years.

All examinations will take place at the close of the winter session only, except in the case of the final examinations for those whose three years' term of study does not expire until the fall. For such candidates, final examinations will be held in October.

There will be no "preliminary term," and the regular winter session will be extended to six months, beginning about the middle of September and ending about the middle of March. The Spring Recitation Class will be continued as an optional course.

Three courses of lectures are required for graduation. Students are expected to attend all the lectures, including clinics, for the first two years. During the third year, students are expected to attend all the clinics, but they may confine their attendance upon the didactic lectures to the branches upon which they are to pass their final examinations, thus having time for practical work in the dissecting room, the chemical laboratory, and the pathological laboratory, and for practical clinical exercises in Medicine, Surgery, and Obstetrics. Students are expected to attend the regular weekly recitations held by members of the Faculty during each session upon the branches upon which they are to be examined at the close of the session.

For students who attend the full course of instruction at the College for three years, the regular examinations at the close of each of the three sessions are obligatory.

Graduates of other recognized medical colleges, of three or more years' standing, will not be admitted to their final examination for the degree, unless they present a certificate of membership of some Medical Society entitled to representation in the American Medical Association.

Fees, etc.—Matriculation fee for each year, $5; for all first-year students, $140; for all second-year students, $140; for all third-year students, including all graduates of other recognized medical colleges who are candidates for graduation, irrespective of the date of their previous graduation, and including third-year students who have attended two sessions at the College, $100. Fee for the first year's examination, $10; for the second year's examination, $10; for the third year's examination, $10; for an examination at the end of a session for the first and second year together, $20; for an examination at the end of a session for the three years together, $30.

Students not desiring to take the full course with reference to graduation, may take tickets for special courses. For first- and second-course students, the fees for the separate departments are as follows: Practice of Medicine, including Psychological Medicine, and Medical Jurisprudence and Diseases of the Throat, $20; Surgery, including Ophthalmology and Otology, and Dermatology, $25; Obstetrics and Diseases of Women and Children, $15; Materia Medica and Therapeutics, including Pathological Anatomy and Histology, and Diseases of the Nervous System, $20; Physiology and Physiological Anatomy, $20; General, Descriptive, and Surgical Anatomy, $20; Chemistry and Toxicology, $20.

For all graduates of other recognized medical colleges, irrespective of the date of graduation, and for students who have attended two full courses of lectures, either at the Bellevue Hospital Medical College or at other recognized medical colleges, the fees for the above-mentioned separate departments will be as follows: Practice of Medicine, etc., $15; Surgery, etc., $20; Obstetrics, etc., $10; Materia Medica, etc., $15; Physiology, $15; Anatomy, $15; Chemistry, $15.

Students and graduates who have attended the third-year course and all Alumni of the College may attend any number of subsequent courses on payment of the matriculation fee.

In order to fulfill, to the letter, the tacit engagements between the College and those students who may attend the session of 1879–'80 with the intention of completing their medical studies under the old plan, the following exceptions will be made for such students:

Students who take a full course for the session of 1879–'80 will be permitted, other requirements being fulfilled, to graduate at the end of a second full course taken in 1880–'81.

Students who attend their second course in 1879–'80, but who do not graduate at the end of the course, will be permitted to attend the course of 1880–'81 as third-course students, without payment of fees, and graduate at the end of the session.

Students who attend two full courses at the College in 1879–'80 and in 1880–'81, but who do not graduate in 1880–'81, will be allowed to attend the course of 1881–'82 as third-course students, without payment of fees, and graduate at the end of the session.

To summarize the exceptions just mentioned, the new requirements will apply to those only who begin their attendance at the Bellevue Hospital Medical College, either as first-year, second-year, or third-year students, with the session of 1880–'81; and students who begin their attendance with the session of 1879–'80 may graduate under the old requirements.

A. Flint, Jr.,
Secretary of the Faculty.

Treatment of Uterine Tumors by Dilatation and the Ecraseur. By George H. Kidd, M. D.—The following is taken from the address delivered at the opening of the section of Obstetric Medicine, at the annual meeting of the British Medical Association:

It will, perhaps, be in the recollection of some now present that, so long ago as 1868, at the meeting of the Association in Oxford, I described a peculiar method of dilating the uterus, and related a case in which I had been enabled by this means to remove a large number of intra-uterine polypi. In a paper subsequently published in the "Dublin Quarterly Journal of Medical Science" for February, 1869, I gave a diagram illustrating this method of dilatation, and showing the polypi as found in the uterus at the time of the operation. Some copies of this diagram are now on the table. It will be observed that six pieces of sea-tangle, long enough to reach from beyond the os externum to the fundus, but not to touch it, have been introduced side by side, one after another, forming a bundle of parallel pieces; and it will be seen that these, as they absorb moisture and swell, must dilate not only the os externum, but the os internum and the cavity of the uterus itself at the one operation. Thus, if the os be sufficiently large to admit the necessary number of pieces at the first sitting, the whole process may be completed in twenty-four hours. If not sufficiently large, a few pieces must be introduced in the first instance, and removed at the end of twenty-four hours, when a larger number can be used, and dilatation thus effected to any required extent. Generally, even in the nulliparous uterus, the tissues are so relaxed by hæmorrhage that five or six pieces, each as large as a No. 6 catheter, can be introduced at the first sitting, and a dilatation procured sufficient for the introduction of the finger and exploration of the uterus, or the removal of small tumors. For the removal of large tumors, however, a much greater degree of dilatation is required, and it may be necessary to introduce from twelve to eighteen pieces, which can generally be got in at the second sitting if six have been introduced at the first; but it is to be borne in mind that it is always advisable, when about to remove the tents, either for the introduction of others or for proceeding with the operation, to wash out the vagina with a solution of permanganate of potash, and after their removal to wash out the uterus itself with a similar solution before any further steps be taken; for, though sea-tangle does not give rise to the putrid and offensive discharges found when sponge is used, yet fluids accumulate which are irritating, and may, if not removed, prove injurious both to the operator and to the patient.

We have recently had a new kind of dilating material made known to us under the name of tupelo-tents, that may, at the second sitting, be advantageously used instead of sea-tangle. This substance has been brought into notice by Dr. Sussdorff, of New York, in a paper published in the "New York Medical Record" of July, 1877. The tents are formed from the root of the *Nyssa aquatica*, which grows in the swamps of the Southern States of America. As imported into this country, they are too short to be of much use for dilating the uterus; but Messrs. Fannin & Co., of Dublin, have procured them for me of the full length required. These tents swell more quickly, and in proportion to their size when dry to a greater degree, than does the sea-tangle; but the tangle can be more easily introduced in the first instance, and, from its slower and more gradual action, will probably be found less painful and safer for the patient than the other. As soon, however, as the process of dilatation has commenced, and the tissues have become softened and relaxed, the tupelo will complete it more quickly and thoroughly than the sea-tangle. If three tupelo-tents can be introduced at the second sitting, and along with them four or five pieces of No. 6 sea-tangle, the uterus will generally be found sufficiently dilated at the end of a further twenty-four hours to permit the removal of a tumor measuring from three to four inches in diameter.

The dilatation of narrow passages dates from the earliest ages of surgery, prepared sponge being the substance generally used for the purpose; but, till suggested by Sir James Simpson about thirty years ago, the exploration of the uterus by its means had not been attempted. Till then, as Sir James has stated, intra-uterine polypi "were generally considered as placed beyond the pale of any certain means of detection, or any possible means of operative removal." But now, following in his footsteps, and using the improved methods at our disposal, large tumors, such as even Sir James Simpson would not have thought of touching, have been made accessible, and brought within the domain of surgery. The dangers and inconveniences, however, attendant on the use of the sponge have deterred many from attempting to dilate the uterus at all, or have led them to do it timidly and inefficiently; thus Dr. Emmet, in his recently published book, a work which would amply prove him, if we did not already know it, to be not only a bold but a most skillful and successful surgeon, though he describes a modification of the sponge-tent, and a special instrument for dilating the uterus, seems to scarcely use either for purposes of treatment, but for diagnosis only; and, indeed, specially recommends, in speaking of large tumors, that no attempt should be made for their removal till they appear at the os and begin to come down into the vagina. But we all know that, in the majority of cases, a woman's health is shattered and her life often placed in extreme jeopardy long before the tumor makes its appearance at the os, or begins to press on it. As a further example, I may mention that one of the specimens on the table was removed from the uterus of a lady who for some time was under the care of one of the most eminent gynæcologists and successful operators of the age, who, after spending a week in trying to dilate with sponge-tents, gave up the attempt, and recommended that the uterus should be extirpated, or the ovaries removed by Battey's operation; yet, after the use of two series of sea-tangles for forty-eight hours, the tumor, which was imbedded in the posterior wall of the uterus near the fundus, was safely removed by a combined process of enucleation and avulsion: an operation hazardous enough, but certainly much less so than the extirpation of either uterus or ovaries. In another case, which occurred about two years ago, the patient had been assured by one of the leading gynæcologists in the north of England, that the tumor, the nature of which he had fully recognized, could not be removed by any possible means, yet, by the means now detailed, it was, in a space of forty-eight hours, brought within reach and removed; and the lady, who had lived several years in sterile marriage, has since given birth to a child. I have not the tumor here to exhibit, for she insisted on taking it home with her to show to her friends that such tumors could be removed.

Having dilated the uterus and made the tumor accessible, the next step is to remove it. In the paper on uterine polypi already alluded to, the mode of removing a polypus with an *écraseur* is described and illustrated by a diagram; even large tumors, if prominent into the uterine cavity, may be removed in the same way. The uterus is first drawn down to the vulva, having been seized by a strong vulsellum; then the tumor is laid hold of either with a fine vulsellum or tenaculum, or with the "spiral instrument" described and figured in his book by Dr. McClintock, which is, indeed, nothing more nor less than a long corkscrew, and the loop of a wire *écraseur* is passed round its base. In my first paper, I recommended that this should be a soft iron wire; but I now find that, for large tumors, a finely-tempered steel wire is the best, such as a piano-string, as it, though it may be compressed in passing through the os, opens again by its own elasticity when it gets into the cavity of the uterus, and is, therefore, more easily passed over the tumor, and it is, besides, firmer and stronger than the iron, and will bear a greater strain. In using an *écraseur*, one or two effects will be produced. If both ends of the wire be attached to the screw, then a purely crushing movement is produced. When the screw is worked, the wire constricts the tissues till it gradually crushes its way through. If one end of the wire be attached to the screw and the other fixed, then a cutting motion is obtained combined with the crushing. This combination of cutting and crushing enables us to divide tumors that would resist and break the strongest crushing instruments; but, to obtain the combined action of cutting and crushing, the screw holding the wire must travel double the distance required in the crushing movement. With the ordinary *écraseur*, consequently, it is often necessary to stop in the middle of the operation and readjust the wire before the operation can be completed. This might, perhaps, be obviated by using Weiss's *écraseur*, which has a windlass to wind up the wire, but the instrument is very cumbrous, heavy, and inconvenient, and I believe it has never come into use. A Dublin student, Dr. Denham, son of Mr. Denham, Ex-Master of the Rotunda Hospital, has, however, invented a simple instrument by which either a crushing or a combined crushing and cutting action can be obtained; and, by its use, what has hitherto been one of the greatest practical difficulties in cutting through the base of large sessile tumors will probably be quite overcome. The difficulty consisted in this, that, to encircle a tumor of, let us say, from three to four inches in diameter, the loop of wire must be more than from nine to twelve inches in length, and, if only one end of it be attached to the screw so as to give the combined cutting and crushing movement, the *écraseur* must be so long as to be unwieldy in its proportions, and weakened in its powers. Denham obviates the difficulty by making one end of the wire traverse the whole length of the screw, and enabling us, this being accomplished, to make the other end, by a very simple movement, take up the action and follow the same course. An inspection of the instrument which lies on the table will show at a glance how this is accomplished.

What has been said so far, as to the removal of the tumors after access to them has been obtained by dilating the uterus, refers to intra-uterine tumors—that is, those which have grown into the cavity of the uterus; but interstitial tumors, or those imbedded in the substance of the uterine wall, when they approach closely to the mucous membrane, often give rise to hæmorrhage, as serious and as injurious to life and health as that caused by intra-uterine tumors. The avulsion or enucleation of such tumors has long been practiced; but, till Dr. Marion Sims and Dr. Gaillard Thomas described their mode of operating and devised instruments for the purpose, it seemed to me too dangerous to be attempted, except in extreme cases. Such tumors can now, however, be removed almost as safely as those which have grown into the uterine cavity; but, when they lie high up in the cavity of the uterus, full dilatation must first be effected, and for this purpose the method now described appears to me to be the safest and most efficient.

A series of observations on the shape of the uterus, when enlarged by the growth of a tumor in its cavity or in its walls, has induced me to suggest a few simple rules for the diagnosis of the relations and position of the tumor, which seem likely to enable us to know, before proceeding to dilate, the conditions that will probably be met with. The rules may be summed up as follows: When we have evidence of the existence of a tumor, and the cavity of the uterus is enlarged, if the uterus be uniform in shape, without any bulging out or unequal enlargement of any of its walls, the tumor will probably be found to be more or less pedunculated, growing from the fundus of the uterus and hanging down into its cavity. If the uterus be found unequal in its outline, bulged out at one side and straight at the other, and if, on introducing the sound, it pass along the convex or bulged-out side, then the tumor will be found to be growing from the wall opposite to where the bulging-out occurs, and projecting into the cavity. If this bulging-out be sudden and much marked, the tumor will probably be pedunculated; if the bulge be less marked and gradual, the tumor will probably be sessile, and projecting into the cavity from the wall opposite to the bulge, and may be so far interstitial as to have a thin layer of muscular fiber covering it over, under the mucous membrane. If the uterus be bulged out in the same manner at one side, and the sound pass along the straight instead of the convex or bulged side, then the tumor will be found to be interstitial, and deeply seated in the uterine wall, closer probably to the peritoneal than the mucous surface. If further experience should confirm these rules, they will, I hope, afford us some aid toward deciding in what cases an operation should be urged, and in what it should be undertaken with more caution.

Books and Papers in Hospitals.—The following remarks on the use of books in hospitals are taken from the "Lancet":

We quite agree that a great boon will be conferred on the sick poor in hospitals if these institutions can be supplied with books, especially illustrated and entertaining volumes, which may help to divert the slowly convalescent and those suffering from injuries and diseases which incapacitate the body without impairing the power of thought from their pains and grievances. At the same time, we can not but perceive that caution will be necessary. A *circulating* library would be in great peril of becoming a vehicle for the dissemination of disease. Especially dangerous would it be to allow books and papers which have been lying on the bed of a patient recovering from fever, erysipelas, or any one of a score of common maladies, to be used by a patient perhaps convalescent from some delicate operation, with an easily infected wound. It would be even incurring a great risk to allow children to play with picture-books which had been handled by patients suffering from scarlet fever, measles, whooping-cough, and the like. In short, the idea of a *circulating* library for the sick is misconceived. Far better would it be to provide the hospitals with a liberal supply of loosely-stitched sheets, which might be readily procured from the damaged stock of the great publishing-houses, so that after these aids to recovery had served their immediate purpose they might be destroyed. We venture to hope philanthropy may take this line of enterprise, and not one calculated to constitute a new agency for the spread of disease.

Triple Amputation.—An employee on the Brest Railway fell from a carriage while in motion, dislocating his elbow, and two other carriages passed over his legs. He was taken to the hospital in a state of syncope, when it was found that the right leg was only held to the thigh by a few slips of muscle and the skin, the femur having been cleanly severed just above the knee and the femoral divided—hæmorrhage being arrested by the instant formation of a clot. The left foot and ankle-joint were broken up into a confused mass. Dr. Lécléuc, surgeon to the Brest Hospital, amputated at once t
right thigh, having only to shape into regularity the musc
cutaneous strips; but he did not remove the left leg u
about fifteen hours afterward, reaction having by this ti

taken place. Gangrene having invaded the forearm of the left side, on which the dislocation of the elbow had taken place, amputation was performed on the seventeenth day. The patient did very well, having been cured long since, and is now able, by means of apparatus, to walk. M. Rochard brought the case before the Academy of Medicine as a unique example of a patient having survived a triple amputation performed for the same injury, Baron Larrey, however, observed that the case was not unique, for he had seen a man at the Invalides who had undergone amputation of the four limbs; and he had also seen a young Arab in Algeria who had recovered after having had the four extremities divided by a train.—" Gaz. Hebd.," August 8.

Treatment of Sunstroke.—A letter from St. Louis to the " Boston Medical and Surgical Journal " gives the following as the ordinary treatment of cases of sunstroke adopted in the public hospitals:

As soon as the patient is received, his shirt, shoes and stockings are removed, his trousers rolled up or taken off, and he is placed on a woven-wire mattress with nothing over it, so that the air has free access from below as well as above. The beds are placed where there is a draught. Ice-bags are applied to the head, and ice or ice-water to the extremities, care being taken not to allow the cold application to come in contact with the abdomen. In one case seen by your correspondent, I think in several, upon the second day there were marked abdominal tenderness and tympanitis, simulating peritonitis. If under the cooling treatment symptoms of depression or exhaustion manifest themselves, stimulants are administered—ammonia, ether, whiskey, and hypodermic injections of atropia sulphate. This method of treatment seems to be the most successful as well as the most rational.

Autopsy of the Late Charles A. Fechter.—We have been favored with an account of the autopsy of Fechter, the actor, who died on the 11th ultimo. The examination was made by Professor William H. Pancoast, assisted by Drs. Shoemaker and McConnell. The chief seat of disease lay in the liver and spleen ; the former, which was in a cirrhosed condition, was much enlarged, weighing nine and one eighth pounds. The spleen was also enlarged, weighing fifteen ounces. The kidneys also were somewhat enlarged. There was about half a gallon of fluid in the peritoneal cavity. The intestines were greatly distended. The heart was somewhat enlarged and flabby. Examination of the brain showed evidences of arachnitis. The encephalon weighed forty-two ounces, and was firm. No signs of cerebral inflammation or softening could be perceived. The immediate cause of death appeared to have been interference with cardiac action from excessive tympanites.—"Philadelphia Medical Times."

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department, United States Army, from August 14 to September [illegible] 1879.

Head, J. F., Lieutenant-Colonel and Surgeon.—Relieved from duty in Department of the East, and assigned to duty as Attending Surgeon and Examiner of Recruits at Boston, Mass. S. O. 195, A. G. O., August [illegible] 1879.

Clements, B. A., Major and Surgeon.—Relieved from duty in Department of the Platte, and to report in person to Surgeon-General of the Army. S. O. 195, C. S., A. G. O.

Forwood, W. H., Major and Surgeon, McPherson Barracks, Atlanta, Ga.—Granted one month's leave, with permission to apply for two months' extension. S. O. 128, Department of the South, August 13, 1879.

Janeway, J. H., Major and Surgeon.—Assigned to duty as Post Surgeon, Fort Columbus, New York Harbor, and Attending Surgeon Headquarters, Military Division of the Atlantic. S. O. 58, Headquarters Military Division of the Atlantic, September 5, 1879.

Horton, S. M., Major and Surgeon.—Granted leave of absence for two months. S. O. 42, Division of the Atlantic, August 12, 1879. Relieved from duty in the Department of the East, and to report to the commanding general of the Department of the Platte for assignment. S. O. 1[illegible] C. S., A. G. O.

Brewer, J. W., Captain and Assistant Surgeon.—Relieved from duty in Department of the Platte, to proceed to New York City, and, on arrival there, report by letter to the Surgeon-General. S. O. 195, C. S., A. G. O.

Smart, Charles, Captain and Assistant Surgeon.—Relieved from duty in the Department of the East, and to report for temporary duty to the President of the National Board of Health, Washington, D. C., for chemical and microscopical work. S. O. 204, C. S., A. G. O., September 4, 1879.

Tremaine, W. S., Captain and Assistant Surgeon.—Relieved from duty in Department of the Missouri, to proceed to New York City, and, on arrival there, report by letter to the Surgeon-General. S. O. 195, C. S., A. G. O.

Vickery, R. S., Captain and Assistant Surgeon.—Relieved from duty in Department of the East, and to report in person to the commanding general of the Department of the Platte for assignment to duty. S. O. 195, C. S., A. G. O.

Vickery, R. S., Captain and Assistant Surgeon.—By direction of the Secretary of War, the operation of so much of Paragraph 3, S. O. 195, A. G. O., August 25, 1879, as relates to this officer, is suspended until October 4, 1879. S. O. 208, C. S., A. G. O., September 4, 1879.

Kimball, J. P., Captain and Assistant Surgeon.—Relieved from duty in Department of the East, and to report to commanding general of the Department of the Platte for assignment to duty. S. O. 195, C. S., A. G. O.

Steinmetz, W. R., Captain and Assistant Surgeon.—Having been found by an Army Retiring Board incapacitated for active service, is, by direction of the Secretary of War, granted leave of absence until further orders, on account of disability. S. O. 209, C. S., A. G. O., September 10, 1879.

Hoff, J. V. R., 1st Lieutenant and Assistant Surgeon.—Relieved from duty in Department of the Platte, to proceed to New York City, and, on arrival there, report by letter to the Surgeon-General. S. O. 195, C. S., A. G. O.

Adair, Geo. W., 1st Lieutenant and Assistant Surgeon.—Upon expiration of his present leave of absence to report in person to commanding general of the Department of the East for assignment. S. O. 195, C. S., A. G. O.

Brown, P. R., 1st Lieutenant and Assistant Surgeon.—Relieved from duty in Department of Dakota, to proceed to New York City, and, on arrival there, report by letter to the Surgeon-General. S. O. 195, C. S., A. G. O.

Finley, J. A., 1st Lieutenant and Assistant Surgeon.—Relieved from duty in Department of the Missouri, to proceed to Philadelphia, Pa., and, on arrival there, report by letter to the Surgeon-General. S. O. 195, C. S., A. G. O.

Turrill, H. S., Lieutenant and Assistant Surgeon.—Assigned to temporary duty as assistant to the attending surgeon, Headquarters Military Division of the Atlantic, and to the Post Surgeon, Fort Columbus, New York Harbor. S. O. 58, Military Division of the Atlantic, September 5, 1879.

Taylor, B. D., 1st Lieutenant and Assistant Surgeon.—Relieved from duty in Department of Dakota, to proceed to New York City, and, on arrival there, report by letter to the Surgeon-General. S. O. 195, C. S., A. G. O.

Turrill, H. S., 1st Lieutenant and Assistant Surgeon.—Upon expiration of his present leave of absence to report in person to commanding general Department of the East for assignment to duty. S. O. 195, C. S., A. G. O.

Kilbourne, H. S., 1st Lieutenant and Assistant Surgeon.—Relieved from duty in Department of the Missouri, to proceed to New York City, and on arrival, report by letter to the Surgeon-General. S. O. 195, C. S., A. G. O.

Banister, J. M., Lieutenant and Assistant Surgeon.—Relieved from duty at Fort Leavenworth, Kan., and assigned to duty at Fort Reno, Indian Territory. S. O. 171, Department Missouri, September 3, 1879.

Obituary.

Clement A. Finley, M. D., U. S. A., formerly Surgeon-General of the U. S. Army, died Sept. 8th, at his residence in Philadelphia, in the eighty-second year of his age. He was born at Newville, Cumberland County, Pa., in 1797, and was a son of Samuel Finley, a major in the Virginia line during the Revolutionary War, and who was receiver of public moneys for the sales of public lands during the administration of Washington. Dr. Finley was educated at Washington College, Pa., and studied medicine at the medical college of Chillicothe, Ohio, graduating from that institution in 1818. In that year he entered the United States army as surgeon's mate of the First Regiment of Ohio Infantry, stationed at Baton Rouge, La. He subsequently filled the position of assistant surgeon, and was medical director in the field in the Black Hawk, Seminole, and Mexican wars. He passed eight years on the frontiers in Arkansas, Louisiana, and Florida, accompanying the commands that established Fort Leavenworth, Jefferson Barracks, and Fort Gibson, and was a member of one of the earliest expeditions to the Rocky Mountains, i. e., that organized in 1834. In 1861 he succeeded General Lawson as Surgeon-General of the United States Army. In 1862 he was retired from active service, on his own application, after having served forty-four years. The commission of Brevet Brigadier-General was bestowed upon him by President Lincoln, in reward for his long and faithful services. Dr. Finley married, in 1832, Elizabeth, daughter of Dr. Samuel Moore, who was at that time Director of the United States Mint, and formerly a member of the Lower House of Congress from Bucks County, Pa.—"Medical Record."

READING NOTICES.

ANALYSIS OF THE URINE.

The translation of Hofmann and Ultzmann's admirable work on the "Analysis of the Urine" is invaluable to every practitioner who is interested in the study of the Genito-Urinary organs, and from the clearness, accuracy, and simplicity of style in which it is written is particularly adapted to the student of medicine.

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BILLROTH'S SURGICAL PATHOLOGY AND THERAPEUTICS.

Since the translation was revised from the sixth German edition, in 1874, two other German editions have been published. The present edition is made to correspond to the eighth German edition. Lister's method of antiseptic treatment is referred to in various places, and other new points that have come up within a few years are discussed. A chapter has been written on amputations and resections. In all there are seventy-four additional pages, with a number of new woodcuts.

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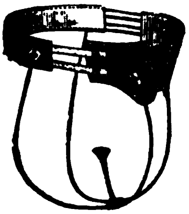

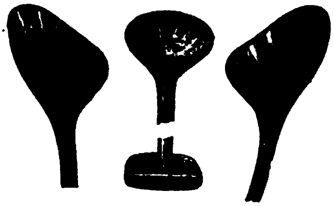

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Careful experiments have established the fact that the **Extract of Cod-Livers** contains very valuable properties, which render it superior to the ordinary cod-liver oil. It is composed principally of *Gaduine*, large proportions of *Iodides*, *Chlorides*, *Bromides*, *Phosphoric Acid*, *Lime*, *Soda*, and *Ammonia*, and especially *Propylamin*, all of which enter, but in very small proportions, into cod-liver oil.

These dragées of pure cod-liver extract take the place of cod-liver oil, and have been used with eminent success by medical celebrities of Europe in cases of *Scrofula*, *Rheumatic Affections*, *Rachitism*, *Phthisis*, and in all cases where a propylamic medication is indicated.

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OFFICE OF

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It is now five years since we first introduced and began the manufacture of Extract of Malt in the United States. It has been our aim to furnish the medical profession in America with a malt-extract equal to the best German make, and (by saving the expenses of importation) much cheaper than the foreign article can be afforded. For the manner in which our efforts have been appreciated by the medical profession we desire to express our warmest thanks.

The difficulties attending the manufacture of Extract of Malt in large quantities can be overcome only by that kind of skill which is acquired by experience. Its constituents must receive no injury by the process, and good flavor and keeping quality, adapting it to all climates, must characterize the product. All are familiar with the striking difference between certain celebrated brands of ale and porter—and yet the poorest as well as the best is, or should be, produced from barley-malt and hops. Success greatly depends, of course, upon the employment of none but the best material; but it is by the use of specific and long-tried procedures that results are obtained which are so difficult to rival.

We do ourselves but simple justice in stating that our *entire attention* is, and for many years has been, *exclusively* devoted to the manufacture of Extract of Malt for medicinal purposes, and that we give our undivided personal attention to each step in the delicate process by which Extract of Malt of excellent quality can alone be made.

Under these circumstances, it is unreasonable to suppose that the various manufacturers of fluid extracts, elixirs, pills, etc., who (attracted by the high reputation of our Extract of Malt) have recently, in various sections of the country, undertaken the manufacture of a similar article, should generally succeed in producing it of a quality according with the fulsome praise with which their advertisements are filled. While being perfectly willing to let the reputation of our Extract of Malt rest upon its real merits, we owe it to the medical profession, as well as to ourselves, to give warning against imposition.

It has come to our knowledge that certain articles extensively advertised as "pure" and "genuine extract of malt," are composed chiefly of the substance called GRAPE-SUGAR OR MALTINE, which, as is well known, is the product of the action of sulphuric acid upon starch subjected to a

high temperature. This artificial grape-sugar or glucose, which is extensively manufactured from corn-starch, is now being used in immense quantities, instead of ordinary cane-sugar, in the sophistication of confectionery, sugar-house syrup, "strained honey," native wines, and canned fruits, and by some brewers in the manufacture of beer and ale. The cheapness of this artificial product of Indian-corn constitutes the chief inducement for this species of substitution for barley-malt and cane-sugar.

Again, an extract of malted grain is manufactured for the purpose of obtaining *diastase*, which (simple and variously combined) is much used in medicine. The appearance of the extract is but slightly changed by being deprived of this important constituent, although it is unnecessary to add that its value as a medicinal agent is thereby greatly impaired. Nevertheless, this very substance, which is little more than refuse material, in the manufacture of diastase, is now being offered for pure malt-extract.

It is *malt-extract* prepared from Barley Malt combined with the proper proportion of Hops, that has been for many years the standard medicinal nutritive employed by the medical faculty of Europe, and especially of Germany. Its value has been established by experience, and its use in the treatment of almost all forms of disease of nutrition is constantly extending. We shall continue to devote the most scrupulous attention to the maintenance of the reputation of our malt-extract, by the careful selection of material, and by unwearied personal attention to manufacturing details.

Attention is respectfully directed to the accompanying extract from *Ziemssen*, and also to our circular and testimonials elsewhere printed.

Very respectfully,

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From Ziemssen's Cyclopædia of the Practice of Medicine, Vol. XVI., page 474:

"The Malt Extract prepared from Trommer's receipt is designed to *ulfill* much the same purpose as Cod-Liver Oil, carbo-hydrates (malt-sugar, extrin) taking the place of fatty matter. The simple (much or little *opped*) and the chalybeate form of Malt Extract are coming more and ore into favor as substitutes for the oil; they are more palatable and *ore* easily digested, and should, therefore, be preferred in the dyspeptic rms of anæmia. During the last few years Malt Extract has almost tirely taken the place of Cod-Liver Oil in the treatment of phthisis and her wasting diseases, at the Basle Hospital, and we have as yet found no ason for returning to the use of the latter remedy. The Extract may given from one to three times a day, in doses varying from a teaoonful to a tablespoonful in milk, broth, beer, or wine."

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TROMMER EXTRACT OF MALT CO.: I inclose herewith my analysis of your Extract of Malt:

Malt Sugar, 46.1; Dextrine, Hop-bitter, Extractive Matter, 23.6; Albuminous Matter (Diastase), 2.469; Ash—Phosphates, 1.712; Alkalies, .377; Water, 25.7; Total, 99.958.

In comparing the above analysis with that of the Extract of Malt of the German Pharmacopœia, as given by Hager, that has been so generally received by the profession, I find it substantially agree with that article.

Yours truly, SILAS H. DOUGLAS,
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Dr. James B. McCaw, *Professor of the Practice of Medicine in the Virginia Medical College at Richmond.*

[Extract from Proceedings of the Richmond Academy of Medicine, October 15, 1878, taken from the "Virginia Medical Monthly" of December, 1878.]

"Dr. McCaw also spoke of the great value of the Buffalo Lithia Waters in the management of SCARLET FEVER, AND IN ALBUMINURIA OF PREGNANT WOMEN."

ALBUMINURIA OF SCARLET FEVER.

Communication to the "Virginia Medical Monthly" for November, 1878, *by* Dr. C. W. P. Brock, *of Richmond, Va., a Member of the State Medical Society.*

"Richmond, Va., *September* 30, 1878.

"Mr. Editor:

"During the epidemic of Scarlet Fever which has been prevailing for a year in this city, and is yet scarcely ended, I have been giving my patients Buffalo Lithia Water *ad libitum*, and to the exclusion of all other water for drinking purposes. In no case since I have pursued this course have I seen even a trace of albumen in the urine of scarlatinal patients, either during the attack or the convalescence. With this experience in a number of cases, and bearing of favorable results in the practice of other physicians in this city who have used the same means, I have thought it worthy of note in your journal. If this result is *propter hoc*, we are enabled to rid Scarlet Fever of one of its most dangerous concomitants.

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"C. W. P. BROCK, M. D."

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"Baltimore, Md., *January* 20, 187

"We take pleasure in saying, in behalf of your preparations of Maltine, that they have fully come up to the measure of your representations. They have given us the greatest satisfaction. We have used them extensively to the great benefit of our patients

"DAVID STREETT, M.D., *Res. Phys., Maternité Hospital*"

"Louisville, Ky., *July* 11, 187

"I am using Maltine with Pepsin and Pancreatine in my family, and am exceedingly pleased with its results. Professor Flint, of your city, whom I highly esteem, has been consulted about the case, and knows the solicitude I have had about it. The above preparation in sherry, after meals, has been productive of great benefit. I am using it in the City Marine Hospital, the Kentucky Infirmary for Women and Children, and in my private practice, and am much pleased with the results obtained.

"T. P. SATTERWHITE, M.D."

"Jackson, Mich., *October*, 187

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"C. H. LEWIS, M.D."

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"C. R. J. KELLAM, M.D."

"36 Weymouth St., Portland Place, London, *May* 30, 187

"I am ordering your Maltine very largely.

"LEONOX BROWN, F.R.C.S., *Sen. Surg., Centl. Throat and Ear Hospital*

"75 Lever St., Piccadilly, Manchester, *January* 16, 18

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"Edde Cross House, Ross, *March* 8, 18

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"J. W. NORMAN, M.B., M.R.C.S.

Chemical Reports on Maltine.

By R. Ogden Doremus, M. D., LL. D.,

Professor of Chemistry and Toxicology, Bellevue Hospital Medical College; Professor of Chemistry and Physics, College of the City of New York.

New York, *April* 17, 1879.

I have visited the works at Cresskill, on the Hudson, where Maltine is prepared, and spent portions of two days in witnessing the chemical processes for making the same. I was particularly impressed with the thorough cleanliness observed, as well as with the completeness of the apparatus employed for accomplishing the desired result—from the first treatment of the grains to the concentration of the liquid product by evaporation *in vacuo*. The operation is effective in extracting the whole of the nutritive constituents of the grains of malted Barley, Wheat, and Oats, with but a slight residue, and is the most complete method yet devised, with which I am acquainted, for accomplishing this object.

Maltine is superior in therapeutic and nutritive value to any Extract of Malt made from Barley alone, or to any other preparation of any one variety of grain. From a chemical and medical standpoint, I can not commend too highly to my professional brethren this unique and compact variety of vegetable diet and remedial agent, nutritive to every tissue of the body, from bone to brain.

Respectfully,

R. OGDEN DOREMUS.

By Professor John Attfield, F. C. S.,

Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain; author of a Manual of General Medical and Pharmaceutical Chemistry.

London, 17 Bloomsbury Square, W. C.,
October 28, 1878.

To Messrs. Reed & Carnrick:

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TWENTY-SEVENTH SESSION, 1880.

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LECTURES ON SPECIAL SUBJECTS.—These lectures by gentlemen well known as authorities recognized in their particular departments, will be delivered during the regular session.

CLINICS.—Besides these lectures, there will be Clinics held as follows:

SURGICAL CLINIC, by Professor Little, every Saturday, from 9 to 12, during the last half of the Session.

MEDICAL CLINIC, by Professor Carpenter, on Wednesday morning, during first half of the Term.

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CLINIC FOR DISEASES OF EYE AND EAR, by Professor Roosa, during his course of lectures.

CLINICS FOR DISEASES OF SKIN, by Professor Taylor, during his course.

CLINIC FOR DISEASES OF CHILDREN, by Professor Roberts.

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CLINIC FOR DISEASES OF THROAT, by Professor Clinton Wagner.

THE PRELIMINARY TERM, consisting of a course of Lectures and Recitations in the various branches of Medicine and Surgery, will be given on the first Thursday of November, 1879, and continue until March 1, 1880. Fee, $30.00.

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JOS. P. ROSS, A. M., M. D.,
Professor of Clinical Medicine and Diseases of the Chest, Rush Medical College, Chicago, Ill.

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NEW YORK

MEDICAL JOURNAL:

A MONTHLY RECORD OF

MEDICINE AND THE COLLATERAL SCIENCES.

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Original Communications.

ART. I.—*The Rise of American Dermatology.* By LOUIS A. DUHRING, M. D., of Philadelphia.*

THE importance of collecting and preserving facts in connection with whatsoever department of science can not be overestimated; and yet they are difficult to grasp. As Dr. Johnson a century ago sententiously remarked: "The hardest thing in the world, sir, is to get possession of a fact." But they are literally the material wherewith to build; without them our structure, no matter how ingeniously devised, must be theoretical, and doomed almost inevitably to destruction and speedy oblivion. The progress of all science is dependent largely upon the character and especially the accuracy of the observations, and in no province are reliable notes more needed than in the study of medicine. Upon the close observance of disease must we rely for our knowledge of the morbid process. Indifferent or careless observations are not merely valueless, but mislead and thus retard progress. Scarcely of less consequence, and essential for the preservation of information, is the proper recording of our labors. He who is capable of noting what he observes in a straightforward manner, stating the same succinctly and clearly, possesses truly a talent. Of the importance of such work, and for its conscientious performance, viewed as it should be by the physician in the light of an almost sacred obligation, too strong words can not be spoken. Upon this topic I would express myself entirely in accord with the late Dr. Edward H. Clarke, when he says "Whoever recognizes a fact, however insignificant it may seem to him, and reports the discovery, makes a valuable contribution to science.

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* Being the President's address before the American Dermatological Association, at the Third Annual Meeting, held in New York City, August 26, 1879.

Yet, notwithstanding the best of intentions and the loftiest aims, individual minds are so differently constituted that, even where the education and experience have been similar, scarcely two observers will note the same occurrence from precisely the same standpoint, much less in the same language. But we should be blind indeed did we not recognize about us, at the present day, the spirit of the modern scientific method of research, pervading every field of study, and the gains which have already accrued therefrom. The methods of study of the present era must prove of inestimable value, and will in time assuredly bring about greater accuracy of thought as well as of expression.

In the study of science, exact formulæ are demanded; where these can not be obtained, the information ought to be as precise as the subject will permit of. Dermatology calls for the closest observation, for it is with the minutest details and seemingly unimportant differences that the dermatologist deals. The diseases must, in the first place, be viewed individually, and afterward comparatively. It is by the latter method of study only that we can hope to arrange and classify them as to their true relations. Every feature and symptom, including causes known or probable, whether internal or external, must be attentively considered if we would thoroughly comprehend the disease in its totality.

Valuing as we must, therefore, the influence of historical data and of recorded observations upon any given subject, I have undertaken to prepare for the present occasion a sketch the work accomplished in our country relating to dermatology with the plan of showing how, from an obscure and neglected branch of medicine, it has gradually assumed its present comprehensive proportions. Benjamin Rush, in one of his addresses, tersely and aptly remarks that sciences are not made, but grow. This is eminently true, and may be as pertinently applied to dermatology as to any of the other sciences. I shall consider the manner as well as the character of this growth; look into the past and examine the records, many of them long since buried, others quite forgotten: in fine, review the rise of dermatology, and account for its existence, for, as we shall see, it can claim a parentage, and this no mean one.

American dermatology, in the broad sense in which this term is to-day employed, is of recent birth, dating back scarcely farther than a period within the recollection of the members of this association. At the same time, while this remark is quite true, we must not allow ourselves to become oblivious of the labors of earlier workers in the same field, many of whom, though now barely remembered, are yet entitled not only to mention for the intrinsic merit of their productions, but to all praise for pursuing the study of the subject single-handed, and under manifold difficulties. It is to these early pioneers that I desire in the first place to offer tribute wherever this may be conscientiously done. Let us not be unmindful of the day in which they lived. They labored for the most part in darkness, and their advantages were small. Faithful, honest work, whether performed in the backwoods or in the teeming city, in the past or in the present, provided it be in accord with the most advanced light of the period, must ever command due regard.

The earliest literature relating to our subject is, as one might suppose, but a part of the history of general medicine, and a small one, the publications being with a few exceptions extremely simple and practical in character. To estimate these productions correctly, it is necessary to bear in mind the existing state of medicine, which both at home and abroad, it may be said, was characterized by the utmost simplicity of practice. According to Thacher * the first medical publica-

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* "History of Medicine in America" (in "Amer. Med. Biog., etc."). Boston, 1828.

tion of any kind in New England, and we may safely assert in this country, was a brochure entitled "A Brief Guide in the Smallpox and Measles," the author being Thomas Thacher, a noted divine as well as a learned physician of Boston, published in 1677. Other small works on the same topic, as those of Benjamin Colman,* Zabdiel Boylston, † distinguished for having introduced the practice of inoculation into this country, and Nathaniel Williams, ‡ all of Boston, shortly followed. At this period there also appeared, from the pen of Dr. William Douglass, pamphlets on "The Practical History of a New Epidemical Eruptive Miliary Fever, etc.," § and "An Essay on the Expediency of Inoculation," by Laughlin Maclane. ‖ Cadwalader Colden, a man of great learning and high attainments, and the author of a work on the climate and diseases of New York, at about this time is said also to have written a paper on the cure of cancer. ¶ Nor need we express surprise at the interest manifested in the smallpox when we consider that it was throughout these decades that the disease was making such direful ravages among our early settlers when every twenty or thirty years found the country prostrated by the ruthless visitation.

At the time of which we have been speaking there was written by Dr. John Mitchell, of Virginia, an essay which is in every way worthy of claiming our attention. The work bearing the title "An Essay upon the Causes of the Different Colors of People in Different Climates,** is an elaborate and lengthy one, wherein the author endeavors to establish a number of points pertaining to the anatomy and physiology of the skin. The systematic and able manner in which the subject is considered is worthy of special remark, and shows the author to have been a deep thinker as well as an ardent student of dermatology. The essay opens with the color of the skin in general, after which the peculiarities in the color of the white and black races, together with certain views as to the causes of the difference in color, are set forth. The color of negroes, the author states, "does not proceed from any black humors, or fluid parts contained in their skins; for there is none such in any part of their bodies, more than in white people," an observation which at the time was doubtless deemed one of importance.

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* "Some Account of the New Method of receiving the Smallpox Ingrafting or Inoculating," Boston, 1721.

† "An Historical Account of the Smallpox inoculated in New England This work was published in London in 1726.

‡ "New Method of Practice in the Smallpox," Boston, 1752.

§ Boston, 1736; reprinted in the "New England Jour. of Med. Surg.," vol. xiv.

‖ Phila., 1756.

¶ This statement is made on the authority of Thacher (*loc. cit.*). I not been able to find the essay.

** Published in the "London Philosophical Transactions" for the 1744. See abridgment of the "Phil. Trans.," vol. x., p. 926, 1756

The author next proceeds to demonstrate very plausibly that the different colors of the human race may be explained by the effect of climate and mode of life, and finally supports the doctrine of the common origin of man, regarding it as highly probable that the primitive color was a shade between black and white, from which the Europeans degenerated as much on the one hand as did the Africans on the other; the Asiatics, he thinks, perhaps best representing the original complexion of the human race. From this very brief and imperfect analysis it is evident that the work is one of unusual merit, and there is every reason to believe that it was not only original, but that it was moreover the first systematic essay on the subject, Lecat's well-known work, it may be mentioned, published at Amsterdam, not appearing until some years later—in 1765.

When we take into consideration the period at which the essay was written, and the limited store of material in the form of previous publications on this topic at the command of the author, we can not but regard it as a remarkable production. The condition of our colonies at this date was far from encouraging to original investigations. The medical profession was truly in a deplorable state, and was, as the late Dr. Robley Dunglison remarks, chiefly remarkable for the absence of all the facilities for education and improvement.* Dr. J.

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* "History of Medicine from the Earliest Ages to the Commencement of the Nineteenth Century." Phila., 1872.

B. Beck, in his interesting address on the "History of American Medical Literature before the Revolution,"* likewise gives a graphic description of the lamentable condition of medicine during these early days of struggle for existence. As he concludes, in estimating the status of the medical profession, medicine undoubtedly stood lower in point of respectability, in the opinion of the community, than either law or theology. With the profession in such an unfortunate situation, the wonder is not that these years should have been so barren in literature, but that any work like that we have been considering should have been produced. Dr. Mitchell is said to have been distinguished in natural history as well as in medicine. He was also the author of a work on the yellow fever as it prevailed in Virginia in 1741.

The climate and the diseases peculiar to our country received some attention at the period of the Revolution from Dr. Lionel Chalmers,† an English surgeon of South Carolina, and from Dr. Johann David Schoepff, ‡ a German and surgeon of the Anspach-Beyreuth troops in America. In Dr. Chalmers's treatise we find but little space devoted to the diseases of the skin, a brief, quite amusing chapter on "ringworms" and "sudamina" constituting all that the author had to say of cutaneous diseases.

Dr. Schoepff, however, who was a man with acute powers of observation, and a botanist of some distinction, in speaking of the intense heat of our summer months, describes at some length the eruption of prickly heat, or "prickling heat" as he tells us it was termed by the people. From the manner in which he delineates the symptoms (writing to Professor Delius, of Germany) it was manifestly a new form of disease to him. It would seem also from his account that the affection was of more frequent occurrence and of a severer type then than now. He appears to have been profoundly impressed with

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[*] "Transactions of the Medical Society of the State of New York," vol. v., 1842.

[†] "Climate and Diseases of South Carolina." This work was published in London, in 1776.

[‡] "Climate and Diseases of America." Translated by James R. Chadwick, M. D., of Boston, 1875.

the high degree of summer heat, for in writing from New York he adds: "The rays of the sun are often powerful enough to raise vesicles on the tender parts of the body when exposed." According to the late Professor George B. Wood, Schoepff was the author of the first work on the materia medica of our country, bearing the title "Materia Medica Americana."

In referring to the diseases of our country, omission must not be made of the works of Dr. William Currie, which shortly followed those we have been reviewing. In his "Historical Account of the Climate and Diseases of the United States of America"[*] we find a description of the eruption produced by, as he states it, the "Rhus vernix, or poison sumac, and by a small creeping vine, resembling the ivy, called rhus radicans, or poison ivy," together with judicious remedies for the treatment of the same. In a later work, entitled a "View of the Diseases most prevalent in the United States of America,"[†] he speaks of erysipelas only, under which head, however, as a variety of this disease, we discover "zona aurea, or shingles"!

It requires no lengthy dissertation to show that cutaneous diseases at this date were still shrouded in the uttermost obscurity, all with few exceptions being disposed of with the single general designation of "skin disease." Even the more important and graver maladies were scarcely distinguished one from another, while concerning etiology and pathology we note even worse confusion, no less eminent a physician than Dr. Benjamin Rush stating that leprosy, elephantiasis, scurvy, and venereal disease appear to be but different modifications of the same disorder, and that "the same causes produce them in every age and country."[‡] Nor was the subject much further advanced in Great Britain, where we find Turner's work, replete with crude observations and the superstitions of the day, numerous editions of which appeared through a period of some thirty years, constituting England's sole authority on dermatology.

Among the numerous publications of Dr. Rush, we note

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[*] Phila., 1792.

[†] Phila., 1811.

[‡] "An Inquiry into the Natural History of Medicine among the Indians of North America." An oration delivered before the American Philosophical Society, Phila., 1774.

"An Account of the External Use of Arsenic in the Cure of Cancers"; [*] "An Inquiry into the Causes and Cure of Sore Legs," [†] as well as articles upon scarlatina [‡] and measles. [§] In connection with the last-named diseases, Dr. John Morgan's brochure on small-pox [‖] may also be mentioned. At this time there was republished John Hunter's "Treatise on the Venereal Disease," in the form of an abridgment by William Currie, [¶] which according to Billings[**] was followed the next year by a translation of the third edition of Swediaur's "Practical Observations on Venereal Complaints"; [††] in 1791 by Hunter's complete "Treatise on the Venereal Disease"; [‡‡] and in 1795 by Benjamin Bell's "Treatise on Gonorrhœa Virulenta and Lues Venerea," [§§] these being the first works on the subject offered to the American profession. Considering that syphilis had for a century and more occupied a foothold in our country, it is singular that the disease should not have received earlier attention at the hands of writers. Thomas Thacher [‖‖] tells us that syphilis first made its appearance in Boston in 1646. In speaking of the diseases to which the early settlers were liable, he says, in this year "these virtuous people were much grieved by the discovery of a disease in Boston, with which till then they were entirely unacquainted, and which, the venerated Winthrop in his journal says, raised a scandal upon the town and country, though without just cause. This proved to be the lues venerea. It originated with the wife of a seafaring man, who after childbirth was affected with ulcerated breast. Many persons were employed to draw this woman's breast, by which means about sixteen persons, men, women, and children, were affected with this odious disease." He further adds that they were unable to control the disease until a young surgeon from the West Indies arrived, who "soon performed a cure."

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[*] Read before the American Philosophical Society in 1786. Phila. 1789.

[†] Phila., 1809. ("Medical Inquiries and Observations.")

[‡] Phila., 1789.

[§] Phila., 1809.

[‖] Boston, 1776.

[¶] Phila., 1787.

[**] "Amer. Jour. of the Med. Sci.," Oct., 1876.

[††] New York, 1788.

[‡‡] Phila., 1791.

[§§] Phila., 1795.

[‖‖] "Amer. Med. Biog.," Boston, 1

The year 1787 witnessed the publication of an important, elaborately prepared work upon the same subject as the earlier essay of Dr. Mitchell, having the title "An Essay on the Causes of the Variety of Complexion and Figure in the Human Species," the author being Samuel Stanhope Smith, a noted President of the College of New Jersey. It was delivered as an oration before the American Philosophical Society in Philadelphia in 1787, and was published in the same year in New Brunswick, New Jersey. The object of the discourse is to prove the unity of the human race notwithstanding the diversity of color and form under which it appears in different portions of the globe. Throughout its pages are recorded numerous interesting observations on the color of the complexion and hair, from which by way of an example we may cite the case of the well-known negro of Maryland, Henry Moss by name, who during a period of twenty years underwent a change in color, from a deep black to a clear and healthy white. Reference to this case, to which many bore testimony, also appears in the "Medical Repository" for the year 1800. In the same periodical two other similar cases are recorded.* Although the principles maintained in this work are essentially the same as those set forth by Mitchell forty odd years before, the author does not seem to have been familiar with this essay. The book is certainly original, and shows the author to have been a man of great erudition and a close observer. It was received with favor and attracted considerable attention in Europe, where it was republished with notes by a professor in Edinburgh. In 1810 a second American edition, comprising copious critical remarks, and a scathing review of Lord Kames's discourse on the original diversity of mankind, by the author, was published.

With the close of the century we note the first of a series of admirable and in some instances remarkable theses, the greater number of which were presented in the University of Pennsylvania, which by this time had risen to a conspicuous position as a seat of learning. The power of its corps of distinguished professors, who at this epoch constituted a truly brilliant galaxy, embracing such men as Rush, Wistar, Shippen, Woodhouse, Benjamin Smith Barton, and Physick, is plainly manifest in the tone of the medical dissertations. Thus we may mention those of Magruder, on small-pox;* Williamson, on scarlet fever; † Huger, on gangrene and mortification; ‡ and Condict, on the effects of contagion on the human body; § while that of Horsfield, entitled "An Experimental Dissertation on the Rhus Vernix, Rhus Radicans, and Rhus Glabrum, commonly known in Pennsylvania by the names of Poison Ash, Poison Vine, and Common Sumach," ‖ stands forth as being exceptionally good and worthy of special remark. It is able and exhaustive, and comprises an accurate description of the botany of these plants, together with numerous experiments as to the degree of their poisonous properties, as well as other matters of interest.

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* Vol. iv., 1800; vol. v., 1801. A case of vitiligo in an American Indian may be found in the "Transactions of the Physico-Medical Society of New York" for the year 1817, reported by Dr. Bissell. Dr. R. W. Taylor gives an account of the case in the "Archives of Dermatology," July, 1879.

Next we may refer to the dissertation "On Perspiration," by Agnew, ¶ of Princeton, New Jersey, who prefaces his work with those strong and meaning words of Rush: "Simple anatomy is a mass of dead matter; it is physiology which infuses life into it." ** Throughout the essay, which is one of unusual excellence, are found numerous references to such authorities as Abernethy (who had a few years before published a brochure on the functions of the skin), Malpighi, Haller, Priestley, and Leeuwenhoeck. Rousseau, in the same year, produced an admirable thesis "On Absorption," †† illustrate by experiments. In speaking of the susceptibility of certai individuals to salivation, the author says: "Dr. Barton assure me that he was salivated by only going several times in close room where one of his patients was under a profu salivation, produced by the mercurial frictions." He furth remarks that Drs. Shippen and Wistar have also informed him that at the Pennsylvania Hospital persons, residing in the roo where the mercurial frictions were administered to several patients, had been salivated.

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* Phila., 1792. † Phila., 1793. ‡ Phila., 1797.

§ Phila., 1794. ‖ Phila., 1798. ¶ Phila., 1800.

** See "An Inquiry into the Causes of Animal Life," being three tures delivered in the University of Pennsylvania.

†† Phila., 1800.

The following year two dissertations appeared: one by Lockette, of Virginia, "On the Warm Bath," * wherein many original experiments are recorded; the other by Tongue, of Maryland, on the "Lues Venerea, the *Modus Operandi* of Mercury in curing it, Gonorrhœa, etc.," † in which the author sets himself the task of proving that syphilis was not introduced into Europe from America, moreover that syphilis and gonorrhœa are two distinct forms of disease. Several other dissertations are worthy of notice and an honorable place in the literature of this epoch, as those of Jackson, of Georgia, "On the Efficacy of Certain External Applications," ‡ and Klapp, of Albany, N. Y., with the title "A Chemico-Physiological Essay, disproving the Existence of an Aëriform Function of the Skin, and pointing out, by Experiment, the Improprieties of ascribing Absorption to the External Surface of the Human Body." § The work was clearly intended to refute the views of Rousseau, which had been promulgated, as we have seen, a few years before: how unsuccessfully is apparent. Yet the character of the experiments, as well as the ingenuity of the author, can not fail to attract the attention of the reader. Still another brochure on the same question, with the title "On Cutaneous Absorption," ‖ may be noticed, the author being Henry P. Dangerfield, of Virginia, a student of the University of Pennsylvania.

In contemplating this group of essays upon physiological subjects, it seems to me one readily discerns the influence of the renowned Professor of Physiology upon his pupils. So zealous a physiologist as Rush could scarcely have failed to profoundly impress his class, and to have engendered among them a love for his favorite branch of medicine. Nor, on the other hand, in accounting for the production of these essays, must we lose sight of the circumstance that these topics were then receiving much attention in the Old World, where experimental studies were being conducted by such famous men as Bichat, Seguin and others.

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* Phila., 1801.

† Phila., 1801.

‡ Phila., 1802. "Medical Theses," edited by Chas. Caldwell. Phila., 1806.

§ Phila., 1805.

‖ Phila., 1806.

We can not leave this epoch in our history without alluding very briefly to the subject of vaccination, which was now the all-absorbing medical topic in the New as well as in the Old World. The great discovery of Jenner, which was made public in his famous "Inquiry" in 1798, had been hurried over the sea, and reached our shores early in 1799. According to Baron's "Life of Jenner," a copy was early forwarded by the discoverer to Dr. Benjamin Waterhouse, Professor of the Theory and Practice of Physic in the University of Cambridge, who while prepared to receive the news was as yet cautious in expression, as may be gathered from a paper on the cow-pox headed "Something Curious in the Medical Line," which appeared in the "Columbian Gazette," March 12, 1799.* It was but a short time, however, before Dr. Waterhouse tested the discovery, of the truth and value of which he was now convinced, by boldly inoculating, with cow-pox virus obtained from Dr. Jenner's stock, seven of his own children. The following year he wrote his well-known brochure, "A Prospect of exterminating the Smallpox; being the Discovery of the Variolæ Vaccinæ, or Kine-pox."† Vaccination now, as a matter of course, obtained universal attention, scarcely less in our own country than abroad, and as a consequence numerous publications in the form of pamphlets were issued, among which may be cited the "Jennerian Discovery; or, a Concise View of all the most Important Facts concerning the Vaccine or Cow-pox," by C. R. Aikin;‡ "Letters on the Kine-pox, etc.," by Oliver and Currie;§ "Practical Observations on Vaccination or Inoculation of the Cow-pock," by John Redman Coxe;‖ "A Practical Treatise on Vaccina or Cow-pock," by Samuel Schofield;¶ "Information respecting . . . . Kine-pock Inoculation," by B. Waterhouse;** and "A Discourse upon Vaccination," by Valentine Seaman.††

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* "Life of Edward Jenner." London, 1827.
† Boston, 1800.
‡ Second American edition, Phila., 1801.
§ Phila., 1802.
‖ Phila., 1802.
¶ New York, 1810.
** Cambridge, 1810.
†† New York, 1816.

Toward the close of the first decade of the century there were published in Boston two Boylston prize essays, from the same pen, one of which in particular must be specially noticed. The first of these considered the subject of "Mortification,"* the other "The Structure and Physiology of the Skin, with a View to the Diagnosticks and Cure of Diseases usually denominated Cutaneous,"† the author being George Cheyne Shattuck, of Boston. The latter essay, on the structure and physiology of the skin, while it can scarcely be said to present an exposition of the dermatology even of that day, yet indicates the author to have been possessed of considerable originality and force of thought. We note an almost entire absence of reference to the labors of earlier workers in the same field, as, for example, to the published theses to which we have just been referring; nor does the author appear to have availed himself of the writings of Willan, whose work on diseases of the skin was first published in London in 1798, copies of which without doubt had long ere this reached our libraries. But the subject-matter is none the less interesting for such omissions, and is replete with observations which show the author to have been a close student of the skin and its diseases. Throughout occur brief reports of cases, some of which, it must be confessed, we should be reluctant in accepting without more complete notes than are given. As an example, I may quote the case of Dr. Fay, of Boston (which appears to have been well known), who states that he was called to attend two African children suffering from body lice, and who, on being suddenly freed of their vermin, by means of a warm bath, "dropped down and expired immediately"! *Credat Judæus Apella.*

The following year Willan's great work "On Cutaneous Diseases"‡ was republished; and within the next few years a translation of the fourth edition of Swediaur's "Complete Treatise on the Symptoms, Effects, Nature, and Treatment of Syphilis," by Thomas T. Hewson, of Philadelphia;§ and Abernethy's work on "Diseases resembling Syphilis,"‖ were likewise given to American readers. According to Billings,[*] Felix Pascalis, a New York physician of some eminence, published an original treatise on syphilis in 1812.

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* Boston, 1808. † Boston, 1808. ‡ Phila., 1809.
§ Phila., 1815. ‖ Phila., 1811.

In passing, a singular little work by Charles Jones, which appeared in this year, bearing the unique and fanciful caption "A Candid Examination into the Origin of the Difference in Color in the Human Family, showing the reason why, the time when, the place where, and the merciful designs of the Author, in bringing about the great variety of natural distinctions,"[†] may be referred to. This curious little essay may be described as being for the most part an autobiographical, religious history, the subject-matter possessing but the feeblest possible relation to the title. One may speculate to no purpose over the author's object in writing it.

Republications of foreign works on diseases of the skin and on syphilis, especially the latter, were now becoming more numerous, "Hunter's Treatise on the Venereal Disease, with an Introduction and Commentary, by Joseph Adams;"[‡] Bateman's "Practical Synopsis of Cutaneous Diseases, according to the Arrangement of Dr. Willan;"[§] Jourdan's work "On Syphilis," translated from the French by R. La Roche;[‖] Carmichael's "Essay on Venereal Diseases, with Practical Notes, etc., by G. Emerson;"[¶] and Desruelle's "Memoir on the Treatment of Venereal Disease without Mercury, to which is added, Observations on the same Subject, by G. J. Guthrie;"[**] all being issued between the years 1818 and 1830.

The current literature, as found in the medical journals during the first quarter of the century, was indeed scant, any author of prominence of the present day contributing, it might almost be said, more in a single year than the whole profession in a decade. An occasional report of a case, often an example of some *lusus naturæ*, as Haskell's "Ichthyosis Cornea" (with a chromo-lithographic plate[††]), or Wiesenthal's extraordinary "Corneous Excrescence,"[*] and "Case of a Negro whose Skin became White,"[†] constituted the average productions of the time. A few other communications, as Cervallo's cutaneous horn (with a portrait),[‡] Dakin's account of the eruption due to rhus-poisoning,[§] which he supposed he was the first to describe, and Harris's treatment of syphilis without mercury, may also be cited. According to the statement of Dakin, Hobson likewise wrote at about this date on the eruption produced by rhus, but I have been unable to obtain the paper, or indeed further reference to it. Two other articles remain to be noted; the first, "An Inquiry concerning Cutaneous Perspiration, and the Operations and the Uses of Sudorific Remedies," by Edward Miller, a distinguished physician and writer of New York; the second, "A Case of Anthrax successfully treated," by David Hosack, likewise of New York and well known as an author, who also wrote several papers on the subject of contagion. In this connection we may also record John Armstrong's "Practical Illustrations of the Scarlet Fever, etc.," and "of the Measles," reprinted in Hartford in 1823; John D. Fisher's "Description of the Distinct, and Confluent, and Inoculated Small-Pox, Varioloid Disease, Cow-Pox, and Chicken-Pox," published in Boston in 1829; and finally, Luther V. Bell's "Observations on Certain Obscure and Undecided Doctrines in Relation to Small-Pox, Varioloid, and Vaccination."

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[*] "A Century of American Medicine: Literature and Institutions," "Amer. Jour. of the Med. Sci.," Oct., 1876.

[†] Printed for and sold by the author, Phila., 1812.

[‡] First American edition, Phila., 1818.

[§] Phila., 1818. A second edition was published in 1824.

[‖] Phila., 1823. [¶] Phila., 1825. [**] Phila., 1830.

[††] "New England Journal of Medicine and Surgery," 1819.

When we reflect upon the fact of the entire absence of interest concerning diseases of the skin as manifested in the systematic works upon medicine of this era, the barren state of periodical literature may be readily explained. Thus, the surgical works of Dorsey and of Gibson, treatises belonging to this age, make but the barest reference to even what may be termed the surgical diseases of the skin, "corns" and "warts," and perhaps a few other diseases, constituting the list. These were dark days for dermatology; days when, as some one has related the story, a student, asking information upon a disease of the skin from a physician, received the reply, "Sir, I know nothing of skin diseases; you must go to the surgeon:" appealing to the surgeon, he was met with, "Sir, I must refer you to the physician." The situation seemed hopeless; the whole subject was shrouded in mystery, and it would seem was judged either obscure, or as being too insignificant to be worthy of serious attention. A disposition existed to consign the whole of this branch of medicine to those outside the professional pale. No one seemed prepared to take up the matter. Nor can this deplorable condition of affairs be accounted for on the plea of lack of opportunities, for much had already been accomplished abroad, especially in England through the labors of Willan and Bateman. The profession was simply not qualified to entertain the subject, and the task remained for later generations. Nevertheless, on the part of a handful of readers there existed some interest and certainly a demand for foreign works, as exhibited by the translation of Cazenave and Schedel's treatise, bearing the title, "A Practical Synopsis of Cutaneous Diseases, from the most Celebrated Authors, and particularly from Documents afforded by the Clinical Lectures of Dr. Biett."* The name of the translator is withheld from the title-page, although, according to the catalogue of the library of the Pennsylvania Hospital, compiled by Dr. Emil Fischer, Dr. R. E. Griffith is entitled to the honor of this work. In 1832 there appeared an original and practical work on "Baths and Mineral Waters," by Dr. John Bell,† in which occurs much of interest relating to the physiology of the skin. The book, the first on the subject from the American press, at once obtained a high position, and to the present day has retained much of its former popularity. Dr. Bell was a scholar of unusual literary attainments, and a prolific as well as an agreeable writer, whose many essays on the most varied medical topics showed him to possess a mind of no ordinary caliber. It was the rare fortune of the writer to become acquainted with this author toward the close of his long and eventful life, and, although sorely tried by disease, his mental faculties to the last remained unimpaired, while the energy and rapidity with which he expressed himself, coupled with unusual quickness of thought, rendered him a most entertaining companion.

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[*] "New England Journal of Medicine and Surgery," 1819.

[†] Ibid.

[‡] "Medical Repository," 1820.

[§] "Amer. Jour. of the Med. Sci.," 1829.

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* Phila., 1829. A second edition was published in 1832.

† Phila., 1832.

A few years later, the "Broome Street Infirmary for Diseases of the Skin," New York city, was established, an event to which it affords me pleasure to refer, being the first institution of the kind in our country. It was opened June 22, 1836, with Drs. H. D. Bulkley and John Watson as physicians in charge. The following year a course of lectures was delivered at the Infirmary by Dr. Bulkley, who had fitted himself for the task by previous study abroad. These lectures, so far as I can learn, were the first ever given on the subject in this country. They were continued during the next three years at the Broome Street School of Medicine, at the New York Dispensary, and later at the College of Physicians and Surgeons, then located in Crosby Street, nine courses of lectures having been delivered here during the following ten years.

The importance of the subject of diseases of the skin was now for the first time beginning to be realized. American students were seeking the hospitals of Europe, especially those of Paris, where at the "St. Louis," under Biett and Cazenave, clinical instruction in skin diseases was made highly attractive. Indeed, at this period there existed only one school of dermatology, that of Paris, which had been created by the vast clinical resources of the St. Louis, and the life-long, earnest, and indefatigable labors of Alibert, Biett, Gibert, Cazenave, Schedel, and Rayer. Those were the palmy days of French dermatology, an epoch when the eyes of the whole world turned to Paris for the latest discoveries, and when to question the dicta of her professors would have been regarded in the light of presumption. Opportunities for the study of diseases of the skin, in England as well as in Germany, were almost entirely wanting, neither clinics nor teachers existing, attractive enough at least to engage foreign students. Thus it happened that the American dermatology of this period and for years subsequently was so thoroughly tinctured with the methods and views of the French. The few articles which appeared in the journals of that day, as, for example, those of Dr. C. W. Pennock, of Philadelphia, on lepra, psoriasis, and elephantiasis,* as well as the clinical lectures of Dr. Bulkley, of New York,† all with few exceptions bear the stamp of Biett and the influence of the St. Louis school. In 1838 a department for skin diseases was instituted at the Northern Dispensary of New York, Dr. Alexander N. Gunn receiving the appointment.

Considerable interest had by this time begun to be manifested in our subject, as evinced by the increased amount of literature in the form of original work, communications on varied topics, and republications. In 1830, a Boylston Prize dissertation, from the pen of Dr. Usher Parsons, later well known as a prominent physician of Rhode Island, "On the Connection between Cutaneous Diseases which are not Contagious and the Internal Organs," was written, although not published until some years later—in 1839. ‡ The style and tone of the essay is very similar to that of Dr. Shattuck, to which reference has been made, and like that work is notable for originality and the absence of remark on contemporaneous literature. The physiology and pathology of the skin first receive attention, after which we find the author dwelling upon, with decided expression of opinion, the mutual dependence and reciprocal influence of different parts of the body, and the sympathy existing between the skin in a state of disease and the various internal organs, the relations of the nervous system to cutaneous diseases being especially insisted upon—views which I would fain see more generally entertained by teachers of the present day. The following year, another Boylston Prize dissertation, "On Scrofula, Rheumatism, and Erysipelatous Inflammation," by Edward Warren, was published. §

Among the articles which had appeared in the medical

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[*] "Amer. Jour. of the Med. Sci.," 1834.

[†] "Annalist," 1846-1848, New York.

[‡] Boston.

[§] Phila., 1840.

journals may be mentioned those of George Busche,* George Hayward, † and N. R. Smith, ‡ on the treatment of vascular nævi; "Observations on Purpura Hæmorrhagica," by Samuel Jackson §; "A Remarkable Case of Sweating," by S. S. Marcy ‖; and a description of the "Cape May Albinos," by the same author ¶; and "On Syphilis in Infants," by H. D. Bulkley. ** The last quoted paper is an able production, setting forth clearly the many symptoms, especially as concerns the skin, of this protean disease. Mention may also be made here of several articles on malignant pustule, by Drs. C. W. Pennock, of Philadelphia, †† and William M. Carpenter, of Jackson, Louisiana, ‡‡ wherein may be found reports of twelve cases, together with matters of interest pertaining to this disease, which was then exciting some discussion.

That the profession was now fully alive to the importance of keeping *au courant* with the old world, and that the publishers were aware of an increasing demand for the most recent works in all departments of medicine, is clearly evinced by the many publications which appeared within the decade. Especially numerous were the volumes relating to dermatology. First, in 1837, there came a reprint of Plumbe's "Practical Treatise on the Diseases of the Skin," §§ which for a time enjoyed considerable popularity in Great Britain; and the same year witnessed the republication of Colles's "Practical Observations on the Venereal Disease, etc." ‖‖ The following year Green's "Practical Compendium of Skin Diseases" ¶¶ was reprinted; and within the next few years there were issued two more editions of Hunter's "Treatise on the Venereal Disease," one with notes by G. G. Babington,*** the other with notes by James F. Palmer;††† the brochure of Parker "On the Modern Treatment of Syphilitic Disease"; * the paper of Key "On Primary Syphilitic Cases"; † Dendy's "Practical Remarks on Diseases of the Skin . . . . During Infancy and Childhood"; ‡ Ricord's "Practical Treatise on Venereal Diseases," translated from the French by H. P. Drummond; § and Erasmus Wilson's famous "Practical and Theoretical Treatise on Diseases of the Skin," ‖ which has since passed through so many editions, in this country as well as in England.¶ Reference must also be made to Walshe's "Anatomy, Physiology, Pathology, and Treatment of Cancer," with additions by J. Mason Warren; ** Nunneley's "Treatise on the Nature and Causes of Erysipelas"; †† Durlacher's "Treatise on Corns, Bunions, the Diseases of the Nails, and the General Management of the Feet"; ‡‡ Lugol's "Researches on Scrofulous Diseases," translated by A. S. Doane; §§ Phillips's work on the same disease; ‖‖ Acton's "Complete Practical Treatise on Venereal Diseases"; ¶¶ and finally Rayer's "Theoretical and Practical Treatise on the Diseases of the Skin," with colored plates, edited by John Bell.*** The last-named treatise is a republication of the English translation by R. Willis, a comprehensive and valuable work, which must be regarded as unquestionably the best exponent of early French dermatology, and one which the student may still consult with profit. The name of Rayer must always remain one of the most conspicuous in the list of those who served to create dermatology. He was a student and a physician of unusually high attainments, for he excelled not only as a distinguished dermatologist, but also as a remarkably acute observer and investigator in other departments of medicine.

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* "New York Medico-Chirurgical Bulletin," 1832.

† "Boston Medical and Surgical Journal," 1838.

‡ "Amer. Jour. of the Med. Sci.," 1843.

§ Ibid., 1834. ‖ Ibid., 1839. ¶ Ibid., 1839.

** "New York Quarterly Journal of Medicine and Surgery," 1840.

†† "Amer. Jour. of the Med. Sci.," 1836.

‡‡ "Southern Medical Journal," 1839.

§§ Phila., 1837. ‖‖ Phila., 1837. ¶¶ Phila., 1838.

*** Phila., 1839. ††† Phila., 1840.

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* Dunglison's "American Medical Library," Phila., 1840.

† Ibid.

‡ Ibid., 1841.

§ Phila., 1843.

‖ Phila., 1843.

¶ Mr. H. C. Lea has kindly informed me that the several American editions of this work bear the dates of 1843, 1847, 1852, 1857, 1863, 186[illegible] 1868.

** Boston, 1844.

†† Phila., 1844.

‡‡ Phila., 1845.

§§ New York, 1845.

‖‖ Phila., 1846.

¶¶ New York, 1846.

*** Phila., 1845.

The same year bore witness to the first American work on diseases of the skin, with the title "A Synopsis of the Symptoms, Diagnosis, and Treatment of the more Common and Important Diseases of the Skin," with sixty colored plates, by N. Worcester, M. D., Professor of Physical Diagnosis and General Pathology in the Medical School of Cleveland, and late Professor in the Medical College of Ohio.[*] The book obviously lacks originality as well as experience, and can therefore scarcely be regarded as more than a compilation from the works of the French and English dermatologists of the day. The author, indeed, frankly states in the preface that utility and not originality was his design. The colored plates are from the works of Willan and Bateman, Alibert, Wilson, Cazenave, Rayer and others, but are much reduced in size, and very imperfectly reproduced. Dr. Worcester was a native of Vermont and a graduate of Dartmouth Medical College. He spent some time in the hospitals of Paris acquiring knowledge on the subjects of chest and cutaneous diseases. Upon his return to this country he located in Cincinnati and afterward removed to Cleveland, where the treatise on skin diseases was written. He was a man of ability, and had his life been longer spared would doubtless have contributed original work to dermatology, although it is said that his choice of study rather inclined to diseases of the heart and lungs. He died at the early age of thirty-five, in the year 1847.

As has been intimated, the works upon general medicine and surgery which had up to this date been published, contained but little that in the least degree bore upon dermatology. In 1837, Dr. John C. Warren's treatise on tumors[†] appeared, wherein he briefly considers "epidermoid" and "dermoid" tumors; among the latter he gives an account of two diseases which he designates respectively "eiloides" and "lepoides," about which I may be permitted to take this opportunity of saying a few words.

Eiloides, from *ειλω*, to coil, is very briefly described as an hypertrophy of the skin manifesting itself like a "coil of inflated intestine," each roll (in the case described) being four inches long, growing by a narrow base from the side of the neck. It was removed, but a year and a half later had repullulated. From the description given we should learn but little of the disease, but a colored chromo-lithographic portrait entirely supplies any deficiency in the verbal delineation. The disease is manifestly that which is to-day known as dermatolysis, and this view is further corroborated by the author's statement, who closes his remarks by adding that the case possesses the same characters and is doubtless the same disease as that of Eleanor Fitzgerald, described by John Bell in his "Principles of Surgery." Two excellent portraits accompany Bell's case (which he fails to designate with a name), from which it is plainly seen that this growth, as well as Warren's "eiloides," are both well-marked instances of dermatolysis. As for the "lepoides," from λεπος, bark, conveying the idea of roughness, the affection is manifestly a form of epithelial cancer having its origin in a sebaceous gland. I have taken occasion to devote so much space to these diseases for the reason that some recent writers of distinction have, it seems to me, evidently failed to appreciate their true nature, still describing them under the names proposed by Warren and as being peculiar and rare diseases. Thus, I may cite Professor Gross, who in the last edition of his great work on surgery,* devotes separate chapters to "eiloides" and dermatolysis, quoting largely from Warren for his account of the former.

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[*] Phila., Boston, Cincinnati, 1845.

[†] "Surgical Observations on Tumors, with Cases and Observations." Boston, 1837.

Among other general treatises which were published at this period, I would also refer to Gross's "Elements of Pathological Anatomy," the first edition of which appeared in 1839 and the second in 1845.† There may be found an admirable section on the pathology of cutaneous diseases, which without doubt is the first description of the pathology of these diseases to be found in American literature. The subject is viewed from what may be termed the modern standpoint, while remarks are comprehensive and fully up to the age in w they were written.

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* Phila., 1872.

† Philadelphia.

A few years later the classic work of the late distinguished Professor George B. Wood, upon the "Practice of Medicine,"* made its appearance, in which there occur excellent chapters on the diseases of the skin, to which many thousands of students have since turned for information, and doubtless in many instances have relied upon as their sole guide in the study of these diseases. At this point reference may also be made to the original and valuable work of Dr. Nathaniel Chapman, Professor of the Theory and Practice of Medicine in the University of Pennsylvania, entitled "Lectures on the more important Eruptive Fevers, etc.," including cutaneous hæmorrhages,† which was published a few years earlier. The subject of erysipelas, which, according to Gross,‡ during these years, from 1844 to 1846, was epidemic throughout the country, and was so prevalent and fatal at times that even the slightest surgical operation had to be undertaken with the greatest possible circumspection, was further enriched by communications from Dr. Charles Hall and George J. Dexter,§ and by a long article from Dr. Samuel Kneeland, of Boston, "on the Connection between Puerperal Fever and Epidemic Erysipelas, in its Origin and Mode of Propagation,"‖ in which the author reaches the conclusion that "these diseases have the same origin, one and the same contagion operating in the production of both." This question has again been recently opened by Dr. Thomas C. Minor, of Cincinnati,¶ who likewise endeavors to show a connection between the two diseases.

About the year 1850 the Medical Department of the University of Pennsylvania came into possession of a large and fine collection of models of skin disease, which had been purchased in Europe by Professor George B. Wood and presented by him to the University. This, I believe, was the first treasure of the kind ever brought to our shores. The museum still remains in excellent state of preservation, and comprises some two hundred and thirty pieces, most of which are of wax, and the execution of that well-known and faithful English artist Joseph Towne, so long connected with Guy's Hospital, London. The models, indeed, are reproductions of the best specimens in Guy's Hospital Museum. Among the rarer diseases represented are the three historical models illustrating the several stages of Addison's keloid; a remarkable case of brown ichthyosis of a hand; vitiligoidea tuberosa of the palm of the hand; and true yaws, or frambœsia, of the hand and arm, showing dark-red nodes and tubercles, some of them in a state of ulceration. The collection is also rich in leprosy, one model exhibiting a rare form of the malady where the skin of the face in addition to the characteristic infiltration and tubercular formations has assumed a circumscribed, sharply-defined, uniform olive-green color. The University further possesses the museum of Dr. H. H. Smith, Emeritus Professor of Surgery, comprising some seventy models of cutaneous and syphilitic disease. The St. Louis Medical College, through Dr. Charles A. Pope, also acquired a museum of chiefly syphilitic diseases during this decade.

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* Phila., 1847. † Phila., 1844.

‡ "System of Surgery," Phila., 1872.

§ "Amer. Jour. of the Med. Sci.," 1844.

‖ Ibid., 1846.

¶ "Erysipelas and Childbed Fever," Cincinnati, 1874.

At this time there was published a unique and strange book with the title "Tricologia Mammalium, or a Treatise on the Organization, Properties, and Uses of Hair and Wool, etc.," by Peter A. Browne.* As I have intimated, it is a curious treatise, and unmistakably the work of an enthusiast. Throughout its pages we find evidence of extensive research, great labor, and painstaking investigations. It would seem, indeed, as though the author had devoted his life to the study of the subject, so minute and varied are many of his observations. Hair from every portion of the surface of the various races of man and from the lower animals is carefully examined and classified as to its length, shape, caliber, color, and other peculiarities. Among other matters of interest we may also note an instrument devised by the author and called a "trichometer," designed to measure the ductility, elasticity, and tenacity of hair. The chapters to which the dermatologist would perhaps first turn are those relating to the hair of the head taken from the different human races wherein may be found some curious statements. Regarding the work as a whole, however, it may be remarked that the subject is viewed from a decidedly eccentric and it must be said indifferent standpoint, and that in place of a treatise on hair we have but little more than a grand collection of facts thrown together without arrangement or system. One can scarcely escape the reflection that with such an amount of material at his command the author should have produced a work of greater practical value.

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* Phila, 1853.

Republications of foreign works on diseases of the skin and on syphilis and venereal disease were now rapidly multiplying, each year adding one or more volumes to our libraries. In 1846 Dr. H. D. Bulkley, of New York, edited with notes Burgess's translation of Cazenave and Schedel's "Manual of Diseases of the Skin," a work which was favorably received by the profession, due in part doubtless to the judicious notes of the American editor.* A few years later Dr. Bulkley likewise edited Gregory's "Lectures on the Eruptive Fevers, with Notes, and an Appendix embodying the most Recent Opinions on Exanthematic Pathology; and also Statistical Tables and Colored Plates."† At this period Neligan's "Practical Treatise on Diseases of the Skin"‡ was issued, and proved well adapted to the wants of American readers, probably in a great measure on account of the extreme simplicity of the arrangement of the subject-matter as well as of the style. During the same year, furthermore, Wilson's "Treatise on Syphilis, Constitutional and Hereditary, and on Syphilitic Eruptions";§ Ricord's "Letters on Syphilis," translated by W. P. Lattimore;‖ and Ricord's "Illustrations of Syphilitic Disease," translated from the French by Thomas F. Bettoen, with the addition of a history of syphilis by Paul Beck Goddard, with fifty large quarto plates ¶—works of some importance—made their appearance; while Neligan's "Atlas of Skin Diseases,"** Wilson's "Healthy Skin: a Treatise on the Management of Skin and Hair in Relation to Health";* still another edition of Hunter's "Treatise on the Venereal Disease," with copious additions by Ricord, edited with notes by Dr. F. J. Bumstead;† Ricord's "Letters on Syphilis," translated by D. D. Slade;‡ Vidal's "Treatise on Venereal Disease," with colored plates, translated and edited by Dr. George C. Blackman;§ Jahr's "Alphabetical Repertory of the Skin,"‖ edited by C. J. Hempel; and Toothaker's "Notes on the Diseases of the Skin"¶—all published within the following few years—complete the list. Mention must in addition be made of an original essay, a Boylston Prize dissertation, "On the Constitutional Treatment of Syphilis,"** from the pen of Dr. Silas Durkee, of Boston, which was published at this period.

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* Published in New York. A second edition was demanded in 1852.

† New York, 1851.

‡ Phila., 1852.

§ Phila., 1852.

‖ Phila., 1852.

¶ Phila., 1852.

** Phila., 1856.

The contributions in the form of communications to medical journals for the decade were few, and, with some exceptions, of no vital importance. Two cases of change of color in the negro are reported respectively by Dr. T. S. Savage†† and Dr. J. C. Hutchinson;‡‡ while a "Case of Glanders in the Human Subject," by Dr. L. A. Dugas;§§ reports of cases of Molluscum Fibrosum, by Drs. J. H. Worthington‖‖ and H. H. Smith;¶¶ "Contributions to Practical Dermatology," by Silas Durkee;*** "Cases of Cornu Cutaneum," by P. A. Jewett††† and F. P. Porcher;‡‡‡ and a paper, chiefly therapeutical, on purpura, by J. P. Mettauer,§§§ are likewise worthy of mention. An exceptionally good article by Valentine Mott, of New York, describing five cases (with two portraits) of dermatology-sis, or pachydermatocele, as the author terms the disease, was read before the London Medico-Chirurgical Society and published in the transactions of that society for the year 1854. To Dr. Mott belongs the honor of having been the first to describe a series of these cases illustrating this curious form of hypertrophy of the integument. Malignant pustule at this time also again received attention from Drs. J. H. Baldrige,* S. B. Wells, † Dr. Pierson, ‡ Willard Parker, § and John Watson. ‖

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* Phila., 1853. † Phila., 1853. ‡ Boston, 1853.

§ New York, 1854. ‖ New York, 1850.

¶ "Diseases of the Nervous System," by A. E. Small, M. D., to which is added a treatise on the "Diseases of the Skin," by C. E. Toothaker, M. D., Phila., 1856.

** Boston, 1854.

†† "Amer. Jour. of the Med. Sci.," 1846. (With a colored plate.)

‡‡ Ibid., 1852.

§§ "Southern Medical and Surgical Journal," 1847.

‖‖ "Amer. Jour. of the Med. Sci.," 1845. ¶¶ Ibid., 185[illegible]

*** Ibid., 1851. ††† "New York Medical Times," 1[illegible]

‡‡‡ "Charleston Medical Journal and Review," 1855.

§§§ "Am. Jour. of the Med. Sci.," 1846.

That professional opinion was looking toward the higher development of medicine is shown by the circumstance that special departments for diseases of the skin were created at more than one institution in several of our large cities. Thus we note that in 1853 the Demilt and Northwestern dispensaries of New York each opened clinics for cutaneous diseases. At the former, Dr. H. D. Bulkley, at the latter, Drs. J. Lewis Smith and Stephen Smith, were appointed to conduct the respective services, the clinic at the Northwestern Dispensary comprising vaccination and skin diseases.

In the same year the Howard Hospital, in Philadelphia, was established, with numerous departments for special diseases. Cutaneous diseases were here placed in charge of Dr. Oliver H. Partridge, a gentleman who had fully qualified himself for the position by long-continued study in the Hôpital St. Louis, and who on his return to this country devoted himself specially to these diseases. Since the foundation of the Howard Hospital over six thousand cases of cutaneous disease have been entered on the register. A few years later, in 1856, a clinic for skin and venereal diseases was opened at the Eastern Dispensary of New York, Drs. Morse and Belden being elected the first physicians to the place; and the following year a like service was inaugurated at the German Dispensary of New York, in charge of Drs. Edward Schwedler and Joseph Goldmark; while, in 1862, the Northeastern Dispensary of New York made a similar service, with Drs. J. Scott Payne and Thomas Haigh as attending physicians.

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* "New Orleans Medical and Surgical Journal," 1851.

† "Boston Medical and Surgical Journal," 1859. ‡ Ibid., 1852.

§ "New York Journal of Medicine," 1854. ‖ Ibid., 1859.

At about this date there appeared, within a few years of each other, two original works on venereal disease, to which allusion must be made. The first of these, entitled "Gonorrhœa and Syphilis,"* a volume of some magnitude, came from the pen of Silas Durkee; the second, bearing the title "The Pathology and Treatment of Venereal Diseases,"† was the production of Freeman J. Bumstead. Of the last-named treatise, which was received with unqualified favor, taking at once an enviable position in the world of literature, a second edition was soon demanded, which in 1870 was succeeded by a third. A few years later, moreover, a similar but less pretentious work, with the title "Lectures on Venereal Diseases,"‡ by William A. Hammond, was published.

Valuable additions to our knowledge of certain surgical diseases of the skin, as found in Gross's "System of Surgery,"§ and Smith's "Principles and Practice of Surgery,"‖ both publications of this epoch, may here be referred to. The work of Professor Gross, in particular, contains comprehensive chapters upon erysipelas, anthrax, and furuncle, as well as extended remarks upon warts, sebaceous humors, cutaneous horns, and fibrous molluscum.

Students of dermatology, well qualified by long sojourn abroad and deeply interested in their work, were now beginning to return from Europe, and to enter upon the field as instructors and lecturers. Paris and her long line of famed teachers, who for so many years shed lustre on the Hôpital St. Louis, no longer claimed the exclusive attention of American students. One now began to hear on all sides of the teachings of the eminent Viennese dermatologist, Hebra, who for a lifetime had been devoting himself to the study of these maladies, and who was at this period reaping the fruit of his labors. Students flocked to Vienna from all parts of the world, eager to listen to the words of a teacher who was able to unfold and explain in plain language these hitherto obscure diseases. Among the number were a few of our compatriots, who, after several years' study with Hebra and his distinguished *confrères*, returned home well prepared to teach the principles of the new dermatology, the practical value of which they were not slow to recognize. As early as 1859, we note Hebra's views obtaining a foothold on our shores through the writings of our honored ex-president, Dr. White, whose articles on the "Use of Potash Soap in Cutaneous Diseases," * "Epizoa, Epiphytes, and Itch," † "Lupus Vulgaris," ‡ "Nature of Favus," § "Pityriasis Versicolor," ‖ "Scabies," ¶ "Psoriasis," ** and "Army Itch," †† show clearly the fascination as well as the force of Hebra's doctrines, set forth in the writer's well-known lucid and terse style. In 1861 Dr. White gave the first lectures on diseases of the skin at Harvard University, which were followed, in 1864, by a course on the subject designated "University Lectures." Instruction was also given from 1860 to 1862 in the Rush Medical College by Dr. J. Adams Allen. As worthy of mention, reference may be made to Alfred Hitchcock's communication on "Neuroma," ‡‡ in which are reported three cases of cutaneous neuromatous tumors occurring in one family; also to H. M. Lyman's paper "On Certain of the Accidents which may follow Vaccination," §§ where he quotes an instance of fifty persons being vaccinated with a vaccine fluid, the bottle containing which had been carried and shaken in the pocket. In every case erysipelas and gangrene followed the operation, three out of the number dying, but in none was true vaccinia excited; and, lastly, to Dr. A. N. Bell's admirable brochure on "Malignant Pustule in the United States," ‖‖ which presents a *resumé* of the disease as observed in this country, together with numerous cases. In an article published subsequently, Dr. A. H.

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* Boston, 1859. A second edition was published in 1878.

† Phila., 1861. ‡ Phila., 1864.

§ Phila., 1859. ‖ Phila., 1863.

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* "Boston Medical and Surgical Journal," 1859.

† "Appleton's "New American Cyclopædia," 1859.

‡ "Boston Medical and Surgical Journal, 1860.

§ Ibid., 1861. ‖ Ibid., 1862. ¶ Ibid., 1864.

** Ibid., 1865. †† Ibid., 1866.

‡‡ "Amer. Jour. of the Med. Sci.," 1862.

§§ "American Medical Times," 1862.

‖‖ Albany, 1862.

Smith also describes the same affection.* But if little was done for dermatology during the period we are touching upon, it must not be forgotten that the whole country was plunged into civil strife and terrible war; an era when the profession with one mind naturally turned to surgery, and when the saving of life and limb, rather than the refinements of medicine, occupied the attention of our best intellects.

In 1865 two English books, Wilson's "Student's Book of Cutaneous Medicine and Diseases of the Skin," † and Hillier's "Hand-book of Skin Diseases," ‡ were republished, one of which, the latter, justly attracted considerable attention by the simplicity of the author's style, and the easy manner in which the subject was presented. A second American edition of this work was subsequently demanded.§ We can not mention the name of Thomas Hillier without pausing to regret the untimely hour that deprived the dermatological world and the profession at large of a light which was beginning to shine so brightly, and gave such fair promise of future good work. Had he been permitted to live, he would, it is not too much to say, long ere this have occupied a high and conspicuous place among England's dermatologists.

Shortly after the close of the war, several important clinical lectureships on diseases of the skin were established, the first, in 1865, being that of the University of New York. Dr. Faneuil D. Weisse was the first incumbent of this chair, which in 1867 became a clinical professorship, a position which he held for nine years. Upon his resignation, in 1874, Dr. Henry G. Piffard was elected to fill the vacancy. In the winter of 1866, Dr. William H. Draper also lectured on diseases of the skin in the College of Physicians and Surgeons of New York, and the following year was appointed clinical lecturer at the same institution, the chair becoming a clinical professorship in 1869.

Bellevue Hospital Medical College, in 1866, likewise created a lectureship on dermatology, which the late Dr. Foster Swift was the first to occupy, and which in 1867 was changed to a professorship. In 1871 Dr. Edward L. Keyes was chosen lecturer here, to supply the vacancy caused by the death of Dr. Swift, and the following year received the appointment of professor of dermatology.

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* "American Journal of the Medical Sciences," 1867.

† New York, 1865. ‡ Phila., 1865. § In 1870.

Nor was Philadelphia behind her neighbor city in instruction in this branch of medicine, for in 1866 a lectureship on cutaneous and venereal diseases was established in the Jefferson Medical College, the late Dr. Francis F. Maury, one of the early members of this Association, being appointed to the place, a position which he held until the time of his death, only a few brief months ago. Venereal diseases here received special consideration, Dr. Maury, through his vast experience with these affections, being eminently fitted to impart the knowledge he had thus acquired. He taught the subject clinically, and from a sternly practical standpoint, always with particular reference to therapy, upon which he was wont to dilate so earnestly and with such forcible expression as to deeply impress his hearers. He was emphatically a popular lecturer, his love for the profession, together with his magnetic presence, impulsive, rapid, at times passionate utterance and flow of language, his agreeable voice, sympathetic and fascinating manner, and genial traits, all conducing to render him a great favorite, not only with his class, but with all with whom he came in contact, outside as well as within the circle of the profession. In general surgery, to which branch of medicine he mainly devoted his energies, he undoubtedly achieved his most enduring laurels. As a surgeon he was second to none, being notably distinguished for excellence of judgment and as a brilliant and unusually successful operator. His untimely death, at the early age of thirty-nine, is a loss to the community at large, to his many friends, and to the profession to which he had so zealously devoted himself.

Toward the close of the decade there appeared Cullerier's "Treatise on Venereal Diseases,"* translated by Dr. Bumstead, with notes and additions, illustrated with an atlas of chromo-lithographic plates. The same year witnessed the translation, by Dr. Piffard, of Hardy's brochure on "The Dartrous Diathesis, or Eczema and its Allied Affections," † an essay setting forth more plainly the views of the French school on this topic than can be found in any other work with which I am familiar. It was at this date that the translation of the first two volumes of Hebra's great work was published in England through the channel of the New Sydenham Society, a body to whom we are indebted for the introduction to so many valuable French and German works. American readers were not tardy in recognizing the practical and at the same time scientific spirit which pervaded every page. It required no effort to discern here sound logic, based upon an enormous experience such as never before had been presented. One felt that here was a writer who had not only keenly observed but was capable of drawing deductions from his store of knowledge.

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* Phila., 1868.

† New York, 1868.

Appearing as the work did almost immediately after the publication of the treatises of Bazin and Hardy, in which were given free expression on the question of diatheses, and simultaneously with the last edition of Wilson's treatise, so long a terror to the student, a profound and most favorable impression could not fail to be created. The time was critical. What with the increasing nomenclature, which threatened to assume colossal proportions, and the widely divergent and conflicting views on almost every point of the French and English writers, it was indeed difficult to predict the future of dermatology. The difference between the schools seemed almost irreconcilable. A strong hand was needed to settle definitely certain elementary points, whereby a common territory might be secured upon which to build. This work, it is not too much to say, was accomplished by Hebra.

English nomenclature, in particular, represented by Wilson, whose iconoclastic and at the same time constructive passion (if I may be pardoned for using words so strong) was at this period in the exercise of its fullest sway, and added not a little to the general confusion of the time. Especially trying was it that this authority, whose works had been so largely read in our country, should have abandoned himself to the demolition of his own nomenclature. New words were coined to take the place of old, tried, and well-known terms; the spelling of many names was so changed as to render them barely recognizable; and, in short, complete annihilation of former self seemed more than probable. As an instance of the absurdity of the situation, no less than five names were in turn proposed by Mr. Wilson for the disease we now know (and let us hope may ever know) as psoriasis: lepra, psoriasis, alphos, lepra-alphos, and lepra Græcorum were all tried, and sooner or later rejected. In his last published writings—"Lectures on Dermatology," delivered before the Royal College of Surgeons—lepra Græcorum receives his favor. These numerous and constant changes, actuated from whatever cause, emanating from so high an authority as Mr. Wilson, were certainly disastrous in their results. A brief but able and severe article entitled "An Amusing Chapter in Nomenclature,"* from the trenchant pen of Dr. J. C. White, published at the period we are considering, showed palpably in what an unenviable position Mr. Wilson had placed himself.

Some idea of the confusion that existed at this epoch, owing, as has been intimated, to the antagonistic doctrines of the French and English, and to the arrival on the field of Hebra's writings, may be gleaned from an address "On the Present Condition of Dermatology," by Dr. Henry G. Piffard, before the New York Medical Journal Association.† In referring to the almost hopelessly disturbed state of the nomenclature, Dr. Piffard remarks that the difficulty will never be adjusted until a definite nomenclature and classification be adopted. While the advisability of such a scheme can not for a moment be questioned, we should be inclined to doubt its practicability as a whole. The matter of nomenclature is decidedly more important than that of classification. Let every one then first endeavor, as far as possible, to harmonize existing discrepancies and to bring about the establishment of a fixed and universal nomenclature. Nor, in the light of all that has transpired in the last decade, does it seem extravagantly optimistic to look forward to the realization of this boon at no distant day. I would further add, what it appears to me must be patent to every discerning observer, that the labors of this Association have already accomplished incalculable gain in this direction.

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* "Boston Medical and Surgical Journal," 1869.

† "Medical Gazette," 1868.

The two books of Dr. Howard F. Damon now made their appearance. The first, an octavo of one hundred pages, entitled "The Neuroses of the Skin; their Pathology and Treatment,"* contains chapters upon hyperæsthesia, dermalgia prurigo (the pruritus of the present day), urticaria, zoster, and anæsthesia; the second, a larger and more pretentious volume but similar in style and tone, bears the title "Structural Lesions of the Skin,"† including hypertrophies, atrophies, and pathological new formations, concluding with an extensive bibliography. These works, while they do not bear the stamp of extended personal experience nor of noteworthy observation, being rather compilations than original essays, such as we have at all times full right to expect in the case of monographs must nevertheless be regarded as among the first contributions to what may be termed our modern literature. Nor can it be said that dermatology was during these years slighted in periodical publications, numerous papers, among them some of merit, appearing in the various medical journals. Mention may be made of a series of clinical lectures in the Boston "Medical and Surgical Journal"‡ upon eczema, impetigo, ecthyma, lupus, scabies, and rupia, by Silas Durkee: while this author also published in the same journal reports of cases of "Cornu Cutaneum"§ and "Linear Atrophy of the Skin."‖ The "Nature and Treatment of Eczema,"¶ by James C. White, and an article on "Pediculi Vestimentorum,"** by F. B. Greenough, likewise made their appear in this journal. Carnochan's well-known and most interes case of elephantiasis Arabum (or Græcorum, as the disease erroneously designated), published in the "American Jo of the Medical Sciences,"†† must also be quoted. The p was a middle-aged woman, the growth causing monstrous formity being confined to the head, for the relief of wh

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* Phila., 1868. † Phila., 1869.

‡ These lectures were reprinted the following year, with the "Contributions to Dermatology."

§ 1866. ‖ 1869. ¶ 1866. ** 18

†† July, 1867.

Dr. Carnochan, in 1858, tied, at intervals of six months, both common carotids. Great diminution in size and remarkable improvement speedily followed the operation. At the end of eight years the hypertrophy had assumed even smaller proportions, the result being in all respects highly satisfactory.* Finally, the communications of Bedford Brown, "On the Treatment of certain Chronic and Acute Affections of the Skin by means of the Chloride of Iron"; † B. Joy Jeffries, on "Herpes Zoster Ophthalmicus"; ‡ A. B. Arnold, on "Three Cases of Scleroderma"; § and William H. Geddings, on "Lupus Erythematosus" ‖ remain to be referred to. The last-named paper was an especially meritorious contribution, and was one of the first essays on the pathology of this disease.

In looking over the portly volumes of the "Transactions of the American Medical Association" one can scarcely escape being struck with surprise that so little pertaining to dermatology should have been presented before this large and in one sense representative body. It was not, indeed, until twenty odd years after the founding of the association that the first dermatological paper was offered. In 1869 Dr. Joseph Jones, of the University of Nashville, read an article on "Observations and Researches in Albinism in the Negro Race," in which we find recorded several instances of true albinism, as well as examples of vitiligo, occurring in the negro. One set of these cases is so unique and so complete in the history that I may be pardoned for giving as concisely as possible the outlines. Two true albinoes, characterized by total absence of coloring matter throughout the entire pigmentary system, including the eyes, were born in succession to two black negroes, man and wife. According to the family history on the mother's side, the grandmother and the great-grandfather were all the subjects of vitiligo, but were not veritable albinoes, the characters of albinism first appearing in the fourth generation. From these observations the deduction is manifest that vitiligo in the negro may be hereditary, and furthermore that albinism may sooner or later succeed vitiligo. From the researches of the author it is also apparent that these anomalies of pigmentation occur quite independently of any order or laws of succession, the parents alternately or otherwise procreating perfect negroes and albinoes. The same facts were established by Dr. Samuel S. Marcy, to whose communication reference has already been made, and where it is stated that out of six children from the same mother and father, "both fair emblems of the African race," three were perfect negroes and three faultless albinoes. The first two children were male negroes; then followed two female albinoes; then a black female, and finally a male albino. The subject of vitiligo in the negro, it may be remarked in passing, has more recently been considered by Drs. L. P. Yandell, of Louisville,* and T. F. Wood, of Wilmington, North Carolina.†

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* Two lithographic portraits accompany the article, exhibiting the disease previous to and after the operation.

† "Amer. Jour. of the Med. Sci.," 1866.

‡ "Trans. of the Amer. Ophthalmological Society," 1868 and 1870.

§ "Amer. Jour. of the Med. Sci.," 1869.

‖ Ibid., 1869.

It was at this period that the study of dermatology was being pursued with much zeal and activity in the schools of Vienna, Paris, and London, by a number of our fellow-countrymen, not a few of whose names, it may be said, are to-day as well known abroad as throughout our own land. The teachings of Rokitansky and Virchow in general pathology, which during this decade were exerting such a powerful and revolutionary influence over not only Germany but the whole world, applied with equal force to special pathology; and, as a result of this stimulus, we find investigators everywhere earnestly engaged in the study of the pathology of the skin. The subject was taken up with especial fervor in Vienna by Hebra and his numerous pupils, among whom Auspitz, Köbner, Biesiadecki, Neumann, and Kohn (Kaposi) stand forth preëminently conspicuous. Among our compatriots the admirable pathological studies of J. Collins Warren on keloid, David Haight on herpes zoster, William H. Geddings [illegible] lupus erythematosus, and R. H. Derby on prurigo, may [illegible] referred to as worthy of particular mention.

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* "American Practitioner," 1872.

† "Archives of Dermatology," vol. iv., No. 1, p. 90.

At home new departments for diseases of the skin at our hospitals, as well as special dispensaries, continued to be established. In Boston, the City Hospital, in 1868, opened an out-patient department, in charge of Dr. Howard F. Damon, where during the past decade, as I am informed by Dr. Edward Wigglesworth, now physician to this clinic, nearly twelve thousand patients have been treated. The Massachusetts General Hospital likewise inaugurated an out-patient department for these diseases in 1869, Dr. James C. White receiving the appointment. Here, during the last ten years, between nine and ten thousand cases have been recorded. In New York, in 1868, a department for skin diseases was founded at the German Hospital, with Drs. F. Zinsser and E. Schwedler as surgeons in charge; while in 1869 the New York Dispensary for Skin Diseases was founded, under the management of Dr. Henry G. Piffard. The Woman's Medical College of New York also established a lectureship on skin diseases in 1868, Dr. Edward L. Keyes being appointed to the place, which has since been occupied by Drs. R. W. Taylor, L. D. Bulkley, and G. H. Fox. In Chicago, the same year (1868) saw the creation of a lectureship on dermatology and clinic for skin diseases in the Chicago Medical College.

As showing the spirit of the time and the interest which was now beginning to manifest itself, I may quote a few words from a letter to the "Journal of Cutaneous Medicine," written by Dr. F. D. Weisse, of New York, in 1869. Dr. Weisse, addressing the editor, Mr. Erasmus Wilson, says: "I take great pleasure in communicating to you the fact that the 'New York Dermatological Society' has been organized. . . . The objects of the society 'shall be to afford all those interested in this important department of medicine an opportunity for a free exchange of their opinions and methods of practice, and to contribute American experience and investigation to the fast-accumulating stock of knowledge of the diseases of the skin.'" The first officers were H. D. Bulkley, President; F. D. Weisse, Vice-President; H. G. Piffard, Secretary; F. Zinsser, Corresponding Secretary; R. W. Taylor, Treasurer; and F. L. Satterlee, Librarian. The first meeting of the society was held May 18, 1869, on which occasion the President delivered an address, relating the early struggles of dermatology in New York.* Thus was started an organization which has since exerted a marked and unquestionably beneficial influence upon the profession.

If we look into the state of affairs in Great Britain at this epoch, we shall see that, although much was being accomplished for the subject by a few individuals, there was as yet but little concerted action, and that the profession was by no means fully awakened to the importance of special study, whether of skin or other diseases. McCall Anderson, in the introductory remarks to his excellent monograph on "Parasitic Diseases of the Skin," describes well the state of affairs at this time, humorously setting forth the sentiments of the profession, which to say the least were decidedly conflicting as to the expediency of countenancing specialties. Mr. Wilson, in the same year, however, writes more hopefully when he says: "A recognition of the importance of the study of dermatology is fast gaining ground in our medical schools" and goes on to refer to the fact that departments for diseases of the skin were about to be instituted at several of the large hospitals. Although the subject had previously received considerable attention through special institutions for these diseases in London, it was really not until the period of which we are speaking that the establishment of departments for skin diseases at the hospitals became general. But English public sentiment was now not slow in recognizing their value, for Mr. Wilson, writing a few years later, in 1871, tells us that not less than twenty clinics were in operation in Great Britain.

As an indication of the life which was now on all sides springing up in our cities, and of the overture for an American journal of dermatology, I may also cite the remarks of Dr. Keyes in a review in the "New York Medical Journal" for June, 1869, where he observes: "Activity in dermatological literature seems to be on the increase, and an American journal of cutaneous medicine is now all that remains to appear to make the list fairly full." After referring to the then recent establishment of the Italian, English, German and

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* "Archives of Dermatology," 1878.

French journals of dermatology, he adds, "there certainly is enough interest attaching to the subject to call for a dermatological journal on this side of the water. Let us hope that it will soon appear." Nor was this activity by any means confined to dermatology. The other branches of medicine, including ophthalmology, otology, neurology, and numerous other special fields of study, all seemed to share in the life which had so vigorously manifested itself.

With the year 1870 a new and promising era, full of vitality and spirit, opened upon the dermatology of our country, signalized in the first instance by the appearance of the "American Journal of Syphilography and Dermatology," under the editorial management of Dr. M. H. Henry, of New York. This publication must always be regarded as an important event in the history of American dermatology, for it was unquestionably the means of calling forth a considerable amount of substantial interest in this branch of medicine, as well as much good work, which without such a stimulus would probably never have been produced. The journal throughout its career was ably conducted by its editor, who, together with the untiring exertions of his collaborators, obtained for it an honorable position abroad as well as at home. It contained many meritorious original contributions, translations, abstracts, as well as reviews, representing a large amount of faithful work which could not fail to exert a most salutary effect. During these years American dermatology was born and began to grow; slowly but surely, and vigorously; gaining strength from year to year as new and zealous workers, some of them men of talent, came prominently on the field. The influence of Hebra's views was now commencing to be felt through the medium of not one but a number of his former pupils. Men from the different cities and sections of our country were returning from Vienna, well grounded at least in the method of studying diseases of the skin, while the doctrines of Hebra were ably and clearly set forth in studied reviews of his more important publications, as well as in lectures and in numerous practical papers. Old and erroneous opinions and statements, which, coming perhaps from the hand of authority, had been blindly accepted without question, were now freely exposed and often severely criticised by writers entirely familiar with the subject, who, for the sake solely of truth and the advancement of dermatology, were prepared to sacrifice even the ties of friendship. An elaborate and thoughtful article of this kind, just but severe in tone, entitled "Modern Dermatology,"* did signal service in directing attention to the foreign literature of the day, much of which was antiquated or worthless in the light of recent investigations, and in sifting the grain from the chaff. Literature began to assume an appreciably different and a decidedly healthier tone, the writers with few exceptions who published obviously being sensible that they possessed information worthy of communication; and their productions demonstrated that they were not only intelligent observers, but were moreover thoroughly familiar with the matter in hand. With such a condition of affairs a sense of confidence naturally soon asserted itself, and which, it is indeed quite superfluous to state, has since been steadily acquiring additional strength.

These events bring me to the period when, it seems to me, it may be safely asserted American dermatology actually began to exist; when the foundation-stones were being laid; and when the topic matured into a reality worthy of the name of dermatology: a period when the number of those interested in the study of these diseases and the distinguished character of their work were such as to insure for the matter general recognition.

At this point, without attempting to enlarge upon the theme or to elaborate my position, I am constrained to conclude the sketch which I have had the honor of presenting to you; for, while it was my intention to carry the history onward to the present day, the large amount of material yet remaining I find renders this task quite impossible.

I have thus endeavored to show the gradual rise and development of the dermatology of this country; how from nothing the solid organization of to-day has been reared; pointing out more particularly the means which have been instrumental to this end. Of all that has since been accomplished including the foundation of special institutions, numerous out-patient departments in connection with hospitals, dispensary services, wards in hospitals for skin diseases, professorships and lectureships, and the extensive and valuable work in the form of treatises, atlases, monographs, and essays—the barest statement only can be made. But the grand result of this large and varied measure of honest labor, which for the last ten years has been accumulating, is so obvious and so cheering that I shall make no venture to descant on the subject. Suffice it to say that we have to-day (and the statement may be pronounced without fear of contradiction) a science of dermatology of which the profession, and we as members of this association, may regard with sentiments of just pride.

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* "Amer. Jour. of the Med. Sci.," 1871.

I desire, in conclusion, to express my cordial thanks to the members of this association for the kind services they have rendered me in securing information which without their assistance would scarcely have been possible.

ART. II.—*Hyperostosis and Periostosis of the Bones of the Orbit.** *Illustrated by Two Cases.* By CHARLES STEDMAN BULL, A. M., M. D., Surgeon to the New York Eye Infirmary.

HYPEROSTOSIS and periostosis are two distinct pathological processes in bone, though they may, and very often do, co-exist. Especially is this the case in the bones of the skull and face. The one process, hyperostosis, is rare in the region of the orbit, for, out of a total of over sixteen thousand cases seen by the writer, it has only been observed in two cases. The excessive development of one or more of the bones which enter into the formation of the orbit would, of course, produce the most singular changes in the shape of this cavity. Of late years we have gained a more correct idea of the nature of the processes which occur in diseased bone, and of the differences which exist between a morbid process starting from the periosteum and one originating in the bone-tissue proper.

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* Read by title before the American Ophthalmological Society, July 24 and 25, 1879, at Newport.

Wagner defines hyperostosis as "an increase in the diameter of the bone, occurring in the whole bone or in a part of it." It may affect only the external compact tissue, or the medullary substance alone, or may be met with in both at the same time. These processes are not uncommon in the bones of the skull, and, according to Nélaton, they occur more frequently here than anywhere else in the skeleton. The hyperostosis here, however, seems to involve mainly the external surface of the bones. It was formerly supposed that some inflammatory symptoms must accompany or precede this process, but we know that the thickening of bones may go on for an indefinite period after the cessation of all symptoms of inflammation. Cases have even been known to occur in which a cranial bone has continued to increase in size without any symptoms except those produced by its increase in bulk.

Macnamara makes a distinction between simple hypertrophy and hyperostosis. The former he defines as an increased development of the characteristic elements of bone-tissue, while the latter consists in an altered relation of these elements to one another. He also makes a comparison between chronic diffuse hyperostosis of bone, or sclerosis, as he calls it, and that condition of the cornea resulting from diffuse keratitis, basing it on the similarity of the anatomical arrangements of the soft elementary parts of both tissues. This comparison is ingenious, and seems quite a just one.

As a result of the change in size and shape of the bones of one orbit, the two orbits do not occupy a corresponding position, but one of them is found to be on a higher plane than the other. This difference is sometimes very great, and yet the functions of the eye are not interfered with. This is especially noticeable in the first of the two cases here given, which is an excellent example of pure, non-inflammatory hyperostosis, with absolutely no symptoms except the change in the orbit.

Case I. *Hyperostosis of the Left Side of the Frontal Bo* *the Left Malar, the Squamous Portion of the Left Tempor* *and possibly the Sphenoid.*—Dominick H., aged nineteen, f seen November 15, 1877. Patient well developed and robust; no abnormality except on left side of head and face; no strumous taint in the family, and he has never had any signs of syphilis. He has never seen well with the left eye, which he attributes to inflammation of the eyes in infancy. The change in the face began when he was nine years old, without any known cause, and has slowly and steadily increased, until now it results in an absolute deformity. This deformity consists in a very marked thickening and enlargement of the orbital arch and boss of the frontal bone, of the external angle of the orbit, of the lower orbital margin extending down upon the malar bone and along the zygomatic arch, and of the hollow formed by the squamous portion of the temporal bone. The entire orbit was pushed downward and a little inward toward the median line, the eye was crowded over toward the inner wall of the orbit, and the cornea looked downward and inward. On passing the finger into the orbit, the outer wall was found to be thickened at the expense of the cavity, causing a suspicion that the sphenoid was involved in the process. The difference in level of the two orbits was so marked that the superior orbital margin of the left side was on the same plane with the inferior margin of the right orbit. There was a trifling degree of exophthalmus of the left eye, but the movements of the eye were normal in every respect, and there was no diplopia and never had been any. This thickening had been of slow, imperceptible growth; there was no history of any injury, and there had never been any inflammatory symptoms. Periostitis and its consequences are therefore excluded, and we may hence settle upon hyperostosis of the bones involved, of the general diffuse character, as the diagnosis. The most marked hyperostosis was in the frontal bone, which bulged forward and laterally like a dome, in the latter direction quite overhanging the zygomatic fossa. It gave the sensation of something extremely dense and compact, but both external surface and interior of the orbit were smooth, as far as the finger could judge. R. E. V. = $\frac{20}{30}$; L. E. V. = $\frac{20}{70}$; myopia $\frac{1}{20}$ in each eye. Fundus of the left eye perfectly normal; small corneal macula just below the center. Hence we may regard this case as pure hyperostosis or hypertrophy of bone-tissue, the periosteum in all probability not being involved. These cases are rare. Demarquay cites four cases of hyperostosis of bones of the skull, in which those forming the orbit were more or less involved, but in all there was a known cause, and in some the periosteum was thickened. Galezowski's explanation of these cases of pure hypertrophy is that there is a feeble irritation which persists in the bone and is the quiet cause of the increase.

Macnamara speaks of perverted nerve action, influencing the nutritive changes going on in the part, and thus inducing the abnormal growth in some cases; but admits that in instances of this kind the abnormal growth is confined to the periosteum.

Instances of periostosis joined to hyperostosis, as a result of chronic periostitis from injury, are more common than those of pure hyperostosis, and to this class the second case of deformity of the orbit belongs. As we understand the process, periostosis signifies a thickening of the periosteum, which may exist alone without any hyperostosis. The latter probably occurs in the following way: A periostitis having been produced by some injury, it may be, after a time the underlying bone becomes inflamed. If the inflammatory process in the latter be arrested before caries sets in, the consequence will probably be an hyperostosis. To this process the bones of the orbit are said to be peculiarly liable. The result is well exemplified in the case now to be cited.

Case II. *Periostosis of the Orbital Portions of the Frontal, Malar, and Superior Maxillary Bones from Traumatic Periostitis, with probably some Hyperostosis.*—Jean B. P., aged thirty-two, first seen April 25, 1878. Patient has had strabismus convergens of right eye since early childhood. No struma or rheumatism discoverable in the family. Patient has never had syphilis nor any venereal disease of any kind. Four years ago the patient received a severe blow on the left orbit and left side of the face, which bruised and lacerated the skin and muscles, but it was said produced no fracture. Since then there has evidently been a continuous chronic periosteal inflammation with occasional acute exacerbations brought on generally by exposure to cold. The periostitis extended all round the orbit, involving the frontal, malar, and superior maxillary bones, and has lately extended to the left nasal bone. The line of the nose deviates to the right side. The whole left orbit is displaced toward the right side and somewhat downward, but the displacement is mainly forward. There is some exophthalmus, though not to any great degree, but the plane of the opening of the left orbit is nearly half an inch in advance of that of the right orbit. The orbital margins are enormously thickened, particularly the lower, and at present very tender owing to an acute attack of periostitis. This thickening extends for some distance into the orbit and narrows its capacity so that the movements of the eye are somewhat limited, though not enough apparently to occasion any diplopia. The thickening is so marked at the inner angle, where the nasal bone takes part in the process, that a suspicion of the existence of hyperostosis as well as of periostosis is strongly excited. Whether the actual antero-posterior diameter of the orbit is shortened, and whether the periostosis has extended to the sphenoid and ethmoid bones, it is impossible to say.

In one sense the deformity in this case is as great as in the first case, though there is not so much displacement of the orbit downward, but the squint of the other eye increases the apparent defect by burying the cornea beneath the caruncle on the right side, and thus apparently narrows the distance between the orbits, in spite of the swollen left nasal bone.

This case had been under treatment for a long time but with no apparent benefit, though the acute attacks of periostitis could be made to subside. There was no effect produced upon the chronic thickening of the periosteum, however, by any treatment that had been tried. Large doses of potassium iodide, repeated blistering, and counter-irritation of various kinds, all proved valueless, and the patient finally withdrew from observation. Up to the last the vision remained good, $= \frac{20}{30}+$ on the affected side, and there was no diplopia. The fundus was found perfectly normal.

ART. III.—*The Letter S Curve.* By G. M. GARLAND, M.D., Professor of Thoracic Diseases, Medical Department, University of Vermont.

IN a work designed merely to point out to students short and easy paths to rapid diagnosis, the author makes no pretension of analyzing the character or history of any symptom which he may present. He is not a critic but a stage-manager. His purpose is to arrange symptoms in tableaux, which shall symbolize by their groupings the name of the disease lurking within them. It is assumed, however, that the author of such a book has, in his own study, carefully analyzed each symptom; that he has measured it by the standard of his own experience and by the general testimony of recognized authorities; and that, therefore, the terse, concise statements, which he then makes, embody the latest and most reliable diagnostic data.

Professor Flint * has recently given us a book of this character. As we read its pages, we are impressed with its strong individuality. It is evident that the author is telling what he thinks he has felt and seen, and not merely what he has read. Without stopping to discuss the historical or polemical value of any symptom, without quoting authorities for or against his opinions, he lays down, flat and bare, what he believes and what he wishes students to accept as facts.

It is not my purpose, however, to discuss the merits of his book as a whole, but I wish to call attention to a statement which appears on page 83, in the article upon pleurisy.

"When liquid effusion has taken place, there is dullness over an extent proportionate to the quantity of liquid, and, if this be considerable, there is flatness. If the patient be raised to the sitting posture, the dullness or flatness extends from the base upward, and the upper boundary, on either the anterior, lateral, or posterior aspect of the chest, corresponds to an horizontal line."

This statement is plain and bare, and can not be misunderstood. Professor Flint says the level of a free, non-encysted effusion in the pleural cavity is *horizontal*, when the patient is body is erect, and he proclaims this as a characteristic, distinguishing sign in the diagnosis of pleurisy. There is no hint of any possible deviation from this rule, and the student is left to infer that the portrayal of any line on the chest, other than an horizontal one, would indicate the presence, either of an encysted fluid, or of some condition entirely different from an effusion.

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* Flint, "Clinical Medicine," 1879.

Now, my own experience in percussing pleuritic patients has led me to such diametrically opposite conclusions from those of Professor Flint, that I am compelled to challenge the statement which he makes. I have never yet seen a case of pleuritic effusion in which the percussion line of demarkation between the flatness of the fluid and the resonance of the lung was horizontal in any position of the patient's body. Indeed, leaving out of consideration cases of undoubted adhesions and referring only to such as have passed through the ordinary tidal phases of an acute pleuritic effusion, I have found that the line in question is far from horizontal, and presents a very instructive curve. Impressed by the wide variance between Professor Flint's views and my own, I have taken the pains to consult a number of leading authorities, and I will here present quotations from a few of them to show how far their experience coincides with my own.

Wintrich,* who was one of the first among the Germans to emphasize the percussion line of demarkation between a pleuritic effusion and a contracted lung, says: "As the exudation gradually increases, the level of the fluid does not present a line which is horizontal, or parallel to the ground, but one which descends toward the ground at a more or less acute angle."

Skoda † says: "In many, but not in all cases of pleurisy, the dullness of the percussion sound begins on the back below the shoulder-blades; as it rises higher, it stretches out to corresponding regions on the side, and even to the anterior chest-wall. In front, however, it does not reach so high as on the back."

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* Wintrich, "Virch. Handbuch d. spec. Path. u. Ther.," Band 5, p. 254.

† Skoda, "Abhandlung über Perc. u. Ausc.," 6. Auflage, 1864, p. 295.

Niemeyer[*] declares that "the dullness almost never reaches so high on the anterior chest-wall as on the back. . . . In other cases, and particularly where the effusion nearly fills the pleural cavity, the upper boundary of the dullness stands in front only a little lower than on the back."

Leichtenstern[†] thinks that the fluid collects first in the most dependent portions of the pleural cavity and that the level of its upper surface is mainly determined by the position which the patient maintains during the early stages of the exudation.

1. If the patient lie continuously on his back or nearly so, the level of the fluid will be horizontal for that position. On elevating the patient, however, it will be higher behind and decline to the front. "This boundary of the exudation by a line which descends from a higher position on the back to a lower one in front is by far the most frequent, because the patient usually keeps his bed during the forming stage of the exudation."

2. If the patient walk about during the early stage, the upper level of the fluid will be horizontal.

3. If the patient lie on the affected side, then the effusion will collect in the axillary region, and will form a parabola as described by Damoiseau.

Weil[‡] remarks that the line in question may present a variety of curves. He has found it sometimes highest on the back and at other times higher in the axillary region. He declares emphatically, however, that "cases, in which the upper boundary of the exudation runs horizontally from sternum to vertebral column, I have *never* been able to observe."

Among the French authors we find Piorry[§] asserting that "this line is parallel to the axis of the trunk when the patient lies down, and it is perpendicular to the same when the patient stands up." On the other hand, Jaccoud[‖] thinks that the line is highest behind and descends toward the front, with a tendency toward a parabola.

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[*] Niemeyer, "Lehrbuch der spec. Path. u. Ther.," 1871, 8th edition.

[†] Leichtenstern, "Die Krankheiten der Pleura," 1878.

[‡] Weil, "Handbuch u. Atlas d. topog. Percussion," 1877, p. 136.

[§] Piorry, "Traité de Plessimétrisme et d'Organographisme," 1866, p. 304.

[‖] Jaccoud, "Traité de Pathologie Interne," 1875, tome ii., p. 147.

Damoiseau * has described the line as forming a parabola, with its summit in the axillary region, and its branches passing downward and outward to the vertebral column and sternum.

Woillez † says "the dullness of least extent should be sought *en dehors et en arrière* of the affected side, where it forms a demi-ellipse with its convexity upward. It does not at first extend as far as the vertebral column, as Damoiseau has correctly pointed out; when the effusion grows more abundant, the line of its level becomes horizontal behind, but curves on the side so as to occupy a lower position in front."

Peter ‡ has worked out a more elaborate theory regarding the line, and says that its position depends upon the position of the patient, the form of the thorax, the action of gravity, and the nature of the exudation. Of all these causes, the nature of the exudation is the one which exerts the most influence upon the line of percussion, according to Peter; for, if the exudation be entirely *serous*, the line will be nearly horizontal for all positions of the body.

If the exudation be entirely *fibrinous*, it will adapt itself slowly to changes in the position of the patient, and the line of flatness will be more parabolic in shape.

If the exudation be *sero-fibrinous*, it will gravitate so slowly on change of position that one will find two zones of dullness: (*a*) a superior zone of superficial dullness, due to the thick fibrinous exudation which clings to the walls of the chest; (*b*) an inferior zone of profound and absolute dullness, caused by the serous exudation which gravitates downward.

Of the English authors, Anstie § says that the dullness increases from below upward, "but the line of its termination above is by no means always an evenly horizontal one."

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* Damoiseau, "Recherches Cliniques sur plusieurs Points du Diagnostic des Épanchements Pleuritiques." Extrait des "Archives générales de médecine," 1844.

† Woillez, "Dictionnaire de Diagnostic Médical," 1870, p. 839.

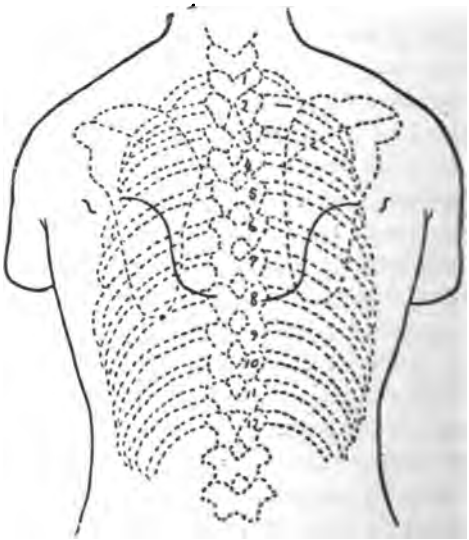
‡ Peter, "Leçons de Clinique Médical."

§ Anstie, Reynolds's "System of Medicine," vol. iii.

Gee * inclines to the opinion that the shape of the line depends upon the position maintained by the patient early in the disease, and thus practically accepts the views of Leichtenstern and Ferber. † Speaking of the stage of absorption, he says: "The upper surface of the liquid, when it reaches as high as two inches above the nipple, is horizontal; when lower than this point, the dullness forms irregular parabolic curves, which become smaller and smaller, and, last of all, disappear at the lowest part of the thorax."

On consulting American authors, we find a curve described by Professor Calvin Ellis, ‡ of Boston, which is radically different from any hitherto mentioned. This curve, which is represented diagrammatically in Fig. 1, begins with medium effusion relatively low down on the back. Passing outward from the vertebral column, it soon turns upward and proceeds obliquely across the back to the axillary region, where it reaches

FIG. 1.



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* Gee, "Auscultation and Percussion," 1877, p. 225.

† Ferber, "Die phys. Symptome der Pleuritis Exsudativa," 187

‡ Ellis, "Boston Medical and Surgical Journal," January 1, 187 Ibid., December 14, 1876.

its highest point. Thence it advances in a straight line, but with a slight descent, to the sternum. It will be noticed that the peculiar shape of this curve on the back gives it a strong resemblance to an italic letter *S*, and therefore I have named it the "letter *S* curve" of pleurisy. According to my experience, it may be traced by proper percussion in every case of free, uncomplicated pleurisy, when the patient's body is erect, and the amount of fluid present is not excessive. As an effusion increases in amount the curve gradually rises and tends to flatten out, so that it no longer presents its characteristic *S* feature after it reaches the second rib. At this point, when the fluid occupies nearly the entire side, the curve comes quite near to the horizontal; but if some of the fluid be withdrawn by aspiration or by absorption, the letter *S* curve will reappear and retreat downward in the inverse order of its advance, until with entire absorption it becomes merged into the normal boundary of the lung. Professor Ellis tells me that, since he discovered this curve and had his attention thereby strongly attracted to the subject, he has never been able to detect any other with acute pleurisy.

Moreover, I am pleased to add further evidence upon this matter from independent observers in Germany. Dr. Heitler,* of Vienna, has noticed that the area of pulmonary resonance, as contrasted with the flatness of the effusion, extends lower on the back than it does on the side. This area of persistent resonance is bounded on one side by fluid flatness, and on the other by the vertebral column, so that it forms a rude triangular space, which Dr. Heitler likens to the half of a monk's hood cut longitudinally.

In Fig. 2 I have drawn a line A B from the summit of the curve perpendicularly to the vertebral column. I have thereby inclosed an irregular triangular space, bounded above by the line A B, on the left by the vertebral column A C, and on the right by the curve C B. By experiment I have found that this space corresponds in position and shape to the lower part of the lower lobe of the lung which here lies in direct apposition to the chest-wall. It will also be seen that this space corresponds to Dr. Heitler's half of a monk's hood. The resonance of this triangle is always duller than that of the portion of lung above A B, and is often rendered still more dull by inefficient ventilation, or by œdema of that dependent part of the lung. I have termed it, therefore, the "dull triangle," and I warn all who seek to trace the true line of pleuritic flatness to be careful not to overlook this region.

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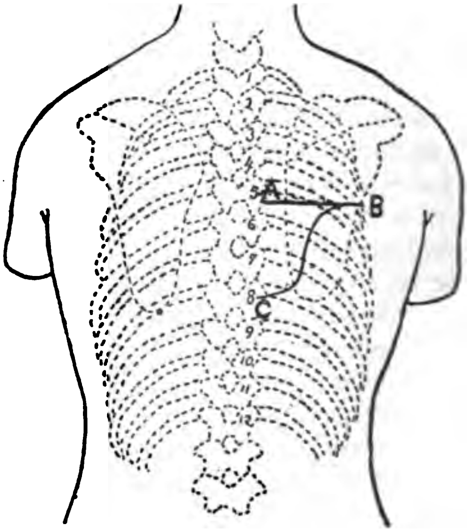
* Heitler, "Wien. med. Wochenschrift," No. 52, 1878.

Fig. 2.



Dr. Ottomar Rosenbach,* of Breslau, has apparently discovered the same dull triangle without recognizing its true shape. He has recently published an article in which he calls attention to a new sign which he considers characteristic of pleurisy as distinguished from pneumonia. He says if you percuss a pleuritic patient immediately after the latter arises from a reclining posture, the back will appear very dull as high as the spine of the scapula. If the patient be then allowed to walk about the room and breathe deeply for a few minutes, there will be found a remarkable clearing up of the percussion sound for a considerable area on the back, and yet as far as the angle of the scapula. It is self-evident that that phenomenon referred to by Rosenbach is none other than a clearing up of the percussion sound of the dull triangle, although, as I have said, he failed to trace the boundaries of the same.

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* Rosenbach, "Berl. klin. Wochenschrift," No. 12 1878.

I have thus given a summing up of the experience of a number of observers regarding the position and shape of the line in dispute; and while they differ from each other in many points, we find that, with one exception (Piorry), they are unanimous in the opinion that a *horizontal level is not* characteristic of pleuritic effusion.

Some of them (Ferber, Leichtenstern) allow that the line may be horizontal under certain conditions, but they modify their concession by asserting that such conditions are exceptional, and that the line as a rule is oblique.

On the other hand, several of them (Wintrich, Fraentzel, Weil, Ellis) say that the line is *never* horizontal.

Although the accumulation of all this adverse testimony does not prove that Professor Flint is wrong in stating the line to be horizontal, yet I present these quotations in the hope that a full agitation of the subject may lead to a more careful and more critical investigation of the curve by American physicians.

I believe myself that the letter *S* curve is the only true characteristic curve of the ordinary non-encysted effusions of acute pleurisy, and I have endeavored, in my work on "Pneumono-Dynamics," * to demonstrate by simple laws of physics and by actual experiments, that this curve is the only one possible under the physical laws which obtain in the chest. Moreover, I am continually receiving testimony from other physicians to the effect that they find the letter *S* curve to be the rule in their own experience since their attention was called to the subject.

In closing, I will add a few words of caution regarding the manner of searching for this curve. Nearly all teachers advise students to compare opposite sides of the chest in percussing pleuritic patients. This advice is excellent to start with, but when the student wishes to trace the curve he must confine his attention *absolutely* to the side involved. He is seeking the line of demarkation between the dullness of a partially collapsed lung and the flatness of a fluid, and therefore he must not confuse his ear by the full resonance of the well side. He must also proceed in perpendicular lines from above downward, and must percuss lightly. Oftentimes one may obscure the true line by percussing hard, and thus producing a strong transmission of resonance from the lung above. The experience of Rosenbach should also be borne in mind, and one should never try to define the size of an effusion immediately after the patient has risen from a reclining posture. If possible, the patient should be allowed to walk about, or at least to breathe deeply for a few times, in order that the lower portion of the lung may be well ventilated before percussion is attempted.

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* Garland, "Pneumono-Dynamics," 1878.

Art. IV.—*The Diagnosis and Treatment of Joint Diseases in their Various Stages.*[*] By L. A. Sayre, M. D.

The time allowed for the discussion of this subject wi prevent the consideration of the minute anatomy of the va ous joints; but, in order to understand the general principle of treatment involved in the diseases which we shall discuss, it will be necessary to give a general outline of the structures embraced in the pathological changes.

And first, what are the component parts of a perfect joi They are bone, cartilage, fibro-cartilage, ligaments, and sy vial membrane. Some of the joints which we shall speak as for instance the articulations between the bodies of the ve tebræ, have no synovial membrane. The varieties of sy throsis are not included in this discussion.

The ends of bones composing joints have a thin shel dense tissue, overlying a mass of cancellated structure wh is exceedingly vascular, and it is owing to this anato structure that extravasation of blood in the extremities bones can readily occur from concussion. The cartilages covering the ends of bone have neither blood vessels nor nerves that have yet been discovered, and live simply by imbibition or absorption of their nourishment from the rich supply of blood vessels in the cancellated structures beneath. Having, therefore, so little vitality, they easily undergo necrosis or degeneration. The synovial membrane is highly vascular, and hence easily excited to inflammatory action from various causes, particularly after sudden changes of temperature and after excessive motion.

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[*] Read before the British Medical Association at their last meeting.

The ligaments which hold the bones together are of a firm fibrous texture, closely attached to the periosteum, and are supplied with blood vessels, and are liable to be torn more or less extensively from their attachments by severe wrenching or straining.

Before proceeding to the subject of etiology, I wish to state that in my remarks I shall make no reference to syphilitic, rheumatic, or gouty arthritis, but shall confine myself to those diseases of the joints which have been generally called chronic, strumous, tuberculous, fungus articuli, exudation and gelatiniform softening, commonly called scrofulous diseases of the joints. This latter class of diseases is illustrated by the so-called strumous disease of the ankle-joint, white swelling of the knee-joint, hip-joint disease, and Pott's disease of the spine. All of these diseases have generally been considered to be dependent upon and caused by a constitutional dyscrasia. In proof of this, I would quote one of the most distinguished surgical authors of my own country, who says ("Transactions of the International Medical Congress," Philadelphia, Sept., 1876), in speaking of the etiology of morbus coxarius: "It can not arise in persons healthy in other respects; there must be a constitutional vice as a predisposing cause. The body must be in a state of debility or feebleness. This is my belief, nay, my solemn conviction. . . . In the great majority of instances the affection is of spontaneous origin, and it is not necessary for a blow, or a fall, or any injury to produce the disease." Further along in the discussion he goes on to state: "The difference between Dr. Sayre and myself seems to be simply this: he says that hip-disease is almost always of traumatic origin, and not necessarily connected with a vitiated constitution. I, and those who think with me, do not deny that injury may excite the disease; on the contrary, we confess that it frequently does so; but we maintain that the disease is always necessarily connected with a vitiated system." If this doctrine is true and the theory correct, I would simply ask why it is that so many patients, having recovered from hip-joint disease, are ever afterward perfectly well and sound? Why is it that simply having had hip-disease cures this constitutional taint? That this doctrine is not true, I am positive, and I base my opinion upon facts obtained from the study of many cases, where there was unquestionably disease of the hip-joint, some of them resulting in caries requiring exsection for the removal of the disease, after which the general health has been thoroughly restored, and many of them have become vigorous and robust, showing no taint of scrofula, struma, or any other constitutional vice. Many of the cases can be traced in their family history for generations back, without a single taint of struma, scrofula, or any other debilitating affection. A case of this kind, most marked, was placed under my treatment by Sir James Paget and Mr. William Adams, with undoubted disease of the hip-joint of many months' standing. The patient has now recovered, without deformity, and with perfect motion. In this particular case the family history, for several generations, is remarkable for the longevity and robustness of its members. In no branch of the family is there a trace of consumption, except by intermarriage. These facts are obtained from the published book of the "Landed Gentry of Ireland," and hence are reliable. One positively ascertained fact of this kind must necessarily be accepted as a successful refutation of any or all theories in opposition to it. I have records of many cases precisely similar to the one just referred to, but the accuracy of their family history for so many generations can not be vouched for, as in the case referred to, because in my country the genealogical record of families is not so accurately preserved.

Struma, scrofula, or a vitiated condition of the gener system, from whatever cause, is the modifying influence the disease in the joint, but not the cause of the disease. The disease itself is the result of traumatism, generally so slight as to be unobserved at the time the injury is received.

If the traumatism be a concussion, an extravasation of blood occurs, which, not being observed, undergoes degenerative changes, and thus becomes a foreign body; or the cartilage may be slightly loosened from its attachment, and, having naturally but feeble vitality, becomes necrotic, and it again is a foreign body; or a severe wrench, tearing from their attachment some of the fibrous tissues, causing an exudation of serum, or blood, which, not being absorbed for want of sufficiently prolonged rest, undergoes degenerative changes, and thus becomes a foreign body.

In either of the instances of traumatism we have just described, we have the nidus, or the starting-point, of a chronic inflammation. This is particularly the case if the injury be very slight, so slight, in fact, as not to attract observation, because then the proper treatment for restoration is not applied at the time the injury is received; if it were, in the great majority of instances these cases would result in speedy recovery. If the accident were more severe, sufficient to excite an acute inflammation, it would attract attention, and by proper treatment would probably result in an early recovery; but, being so slight as not to be noticed, motion and exercise are continued until serious damaging changes have taken place. Now, if the individual thus injured be in a robust, vigorous condition, and of healthy parentage, he may have recuperative power sufficient, with proper treatment, to restore him to health without suffering any constitutional disturbance. But even this person in robust health, if the injury be so slight as not to attract attention, his usual avocations and exercise being continued, instead of repair taking place, degenerative changes are instituted, and chronicity of the disease is the consequence. The degenerative processes going on in and about the joint thus slightly injured produce constitutional disturbances before the local manifestations are such as to attract attention; so that, when the medical attendant detects the local trouble, he finds it also connected with a constitutional dyscrasia, and the local manifestations are, to his mind, the result of this constitutional condition, instead of which, the constitutional condition observed by him is the result of long-continued disease which had been neglected and unsuspected.

Take, for instance, diseases of the spine; long before there is any deformity that attracts attention, the patient has suffered from neuralgic pains in different parts of the body distant from the spine, and generally is not brought for treatment until the deformity is conspicuous, which could not possibly occur until partial absorption of the bodies of the vertebræ had taken place, an evidence that the disease had existed a long time before medical advice was sought. So, too, with disease of the hip-joint; months or even years elapse before medical advice is sought for the treatment of the hip, attention having been paid even by medical attendants to the knee, which they have covered with iodine and narcotic poultices. This serves as an illustration of the principle which I wish to inculcate. Now, if the person thus slightly injured be of a strumous diathesis, either inherited or acquired, or if his system be vitiated, enfeebled, or broken down from any cause, the degenerative changes in the joint involved will go on with more rapidity and lead to more disastrous results than if he had been in a healthy condition at the time of the accident. But even the most decidedly strumous, or scrofulous, must receive some local injury to the point where these destructive changes manifest themselves, for the scrofula, or struma, the constitutional dyscrasia, by whatever name you may call it, involves the entire system—muscular, vascular, nervous, and osseous; and that there should be degenerative changes taking place in one or other particular joint of the body must necessarily be the result of some exciting cause impinged upon the point involved. If scrofula were the essential cause of this disease, as stated by the author above quoted, and almost all of our surgical authors, why is it that so many millions of children with scrofula die from other causes without developing any joint disease?

No man admits more strongly than myself the modifying influence of the strumous or scrofulous diathesis, but that this condition does not produce disease of any joint "spontanely," or without some exciting cause, is my firm conviction. It requires the exciting cause of traumatism to give rise to the local manifestations of this dyscrasia.

Before proceeding further, let us try and come to some understanding as to what is meant by the term "scrofula." If the question were asked this learned body, probably there would be as many answers as there are members present. There is a peculiar condition of the system with enlarged glands, weak muscular fiber, sore eyes, thick lips, chronic suppuration from the ears, all the evidences of mal-nutrition, which, by common consent, we all include under the term scrofula. Some assert that this ill-defined condition must necessarily be inherited; that it is impossible for it to be acquired. If this doctrine were true, it would necessarily involve the tracing back of the scrofulous constitution through the generations of the past ages to Adam, the founder of the human race, and consequently every human being, both male and female, would necessarily be tainted with this inherited vice.

The probability of this state of affairs is too absurd for belief, and hence I maintain that this general constitutional dyscrasia which we have by common consent called scrofula, for want of a better term, can be, and frequently is, acquired by persons with a healthy ancestry, by living in violation of hygienic laws. Bad air, bad food, insufficient amount of nutrition and clothing, sleeping in damp, badly ventilated rooms, want of cleanliness, and the frequent intermarriage of persons living under these deteriorating influences, will produce a condition which can not be in any way distinguished from that which has generally been recognized as inherited scrofula. It will therefore be seen that this condition of the system, which has by common consent been termed "scrofulous," can be created by living in violation of the laws of health.

That this condition, no matter how produced, whether inherited or acquired, necessarily modifies any disease or accident from which the patient may be suffering, all must, I think, admit.

Take the athlete or pugilist who is, as you call it in this country, in the condition of "perfect form." He receives in juries, severe blows, wrenches, strains, or contusions, frequently with but slight extravasations of blood or none at all, his tissues being in such a condition that the vessels do not rupture; but if the vessels do rupture and blood be extravasated, it is absorbed in a short space of time before degenerative changes have taken place. In this condition of maximum health, the reparative processes take place instead of the degenerative. Now, this same athlete or pugilist, by leading a different mode of life—frequent debauches, imprudent diet, want of his accustomed exercise, and a vicious mode of life, may bring his previously splendid constitution into exactly that condition which has generally been understood as scrofulous. When in this latter condition, the same blows or contusions which he could before resist without difficulty now terminate in serious constitutional disturbances.

Some authors have attempted to describe these diseases as chronic, as if the simple element of time had anything to do with the nature of the disease. Most of these cases are chronic, owing to the simple reason of their feeble origin, the traumatism being so slight as to excite but very feeble disturbed action.

Had a more severe injury been sustained, the whole trouble would have been rapidly developed, and thus gone through its various stages with greater rapidity, because a larger number of elements would have been engaged in the destructive processes. In either case it is simply irritation producing inflammation and its necessary consequences, only differing in degree. Take the poor man unaided and alone, with his wheelbarrow and shovel, who digs out the cellar, lays the foundation, and constructs his humble dwelling without assistance. He would certainly be a long time in doing it. If as many workmen as could advantageously have been employed had aided him in digging his cellar and constructing his house, the work would have been accomplished in a much shorter period of time.

The rapidity of the construction of the house would d pend upon the amount of force occupied in the work. S with these diseases, if but few elements are involved in th structural changes, more time will elapse before they wil have accomplished their ultimate destructive metamorphoses than if a greater injury had been sustained; showing, therefore, that chronicity has nothing to do with the character of the disease.

Whenever these injuries occur, they produce an abnormal condition of the system which we term "irritation," which gives rise to muscular contractions, thereby limiting the movements of the joint and parts involved, and causing characteristic changes in the form and position of the body, or the joint, or the limb involved. This peculiar muscular rigidity, which has been called reflex muscular contraction, persists and continues until the termination of the disease.

It is one of the essential elements, which aggravates the difficulty by causing undue pressure upon the parts inflamed, and leading to interstitial absorption and necrotic changes from diminution of the normal blood supply. The bed-sore on the heel, on the sacrum, and on the scapula, is the result of pressure interfering with the nutrition of the part.

So this reflex muscular contraction creates undue pressure upon parts brought in contact, and produces the same result. We hence see the absolute necessity of extension and counter-extension to overcome these reflex muscular contractions in the treatment of all chronic joint diseases. Great errors have been made in the application of this principle by continuing the extension beyond the point required, for then tension or traction is made upon the ligamentous structures that hold the joint together, and one of the most essential principles in the treatment of these cases becomes one of the most destructive agents. Consequently extension and counter-extension should only be carried to the point of relieving the diseased parts from pressure, which is to be decided by the comfort of the patient; and when this point is reached, the parts should be there secured. Rest, as perfect and complete as can be given to the parts involved in the disease, is the next most essential element of treatment. As the diseases of which we are speaking run a chronic course, and therefore a long time must elapse before recovery can take place, the rest obtained to the part involved by the confinement of the whole body to the bed, for months or years, as the case may be, is detrimental to the health of the patient. If, therefore, we can by any mechanical contrivance or artificial means secure this perfect and complete rest to the involved joint or parts involved in the disease, and at the same time allow the patient to take free exercise in the open air, we have put him in the best condition to overcome the constitutional dyscrasia from which he is suffering, whether this constitutional condition was a scrofulous diathesis existing previous to the disease, or whether this similar condition had been caused by the disease. For by exercise the appetite is improved, the fresh air begets a healthy action in the system, which, together with a generous and nutritious diet, does more to eradicate the so-called scrofulous diathesis than any course of medication yet devised.

In some of the joints we have a capsular ligament; and in these there is a period in their treatment when motion becomes as essential an element of treatment as rest in the earlier stages of the disease. If this fact be disregarded in their treatment, the result will be anchylosis.

In the majority of cases of disease of the joints, if detected in their earlier stages, by carrying out the general principles of treatment above described they will generally recover, with little or no deformity and motion more or less complete. If the effusion be very great, in addition to rest, extension, and counter-extension, blisters, counter-irritation, and the internal administration of such remedies as will promote the absorption of the effused fluid are requisite.

Friction and elastic compression are also essential elements in the treatment of these diseases in certain stages. If the effused fluid has undergone degenerative metamorphosis into pus, it should be evacuated by means of the aspirator if possible. If, however, the contents can not escape by the aspirator, then the joint should be freely incised under the antiseptic spray, and carefully washed out and dressed according to the principles so admirably described by Mr. Lister.

If the disease has progressed to caries or necrosis before it comes under observation, it is frequently accompanied wit one or more tortuous sinuses which afford but an insufficie exit to the morbid materials; and hence it is possible, by mea of a free incision in the right direction, to facilitate the exit the discharges, and then, by following out the general instructions above given, repair may take place with more or less deformity and partial or complete anchylosis.

But in the latter condition of caries or necrosis, after having given the patient the benefit of the treatment just recommended, and the disease still goes on progressively, showing the extent of disease to be so great that the patient will probably succumb before the escape of the diseased bone could be effected by the slow process of exfoliation, then exsection and complete removal of the diseased parts is our only remedy. This, when done properly, and with proper after-treatment, will frequently yield the most satisfactory results. In the knee we have a splendid limb with anchylosis; in the ankle, hip, elbow, and wrist we frequently have fine results with but slight deformity and very nearly complete motion.

Correspondence.

To the Editor of the "New York Medical Journal."

SIR: I have read the interesting article by Dr. Gallaher "On the Different Methods of Artificial Alimentation," which appeared in your issue of August, 1879 (vol. xxx., No. 2); and although the paper is rich in copious bibliographic matter, I regretted not finding any mention of alimentation through the *skin* apart from injections, i. e., by other means, viz., the direct application of nutrient substances (beef-tea, milk, etc.), in contact with the surface of the body—with the *proviso*, of course, that there was healthy skin capable of absorbing; and this may be done by immersion, by baths in these fluids, or by applying them in any other way; the question being to ascertain whether the quantity of aliment thus taken into the system will be equal to sustaining the vital powers, and if so, to what extent, both in disease and health. I will therefore feel much indebted if you or your numerous readers can publish in your columns any information which would throw light upon this important subject, and in so doing furnish authoritative references, physiological, pathological, etc. If you can find space for this letter, I will feel exceedingly obliged to you.

I am, sir, your most humble servant,
JOHN C. LUCAS, M. D., F. R. C. S.

INDIA, *September 12, 1879.*

Proceedings of Societies.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, September 24, 1879.

Dr. E. L. KEYES, President.

Excision of Elbow.—Dr. F. LANGE presented fragments of bone which he had removed from the elbow of a man eighteen years of age. When seen by Dr. Lange there was partial anchylosis of the elbow, with mobility of 15°, and pain on motion. Excision was performed June 24th. A shell of bone was left at the insertion of the muscles and ligaments. An appliance to practice flexion and extension was put on during the third week; at the seventh, the joint was well enough to dispense with apparatus. Three months after the operation, extension was normal; flexion, 90°; no abnormal mobility; strength normal; pronation and supination less than normal. The arm had been used without appliance for six weeks. Cicatrization was complete at the end of the fifth week. An examination of the fragments showed disease in the ulna. The articular surface contained holes filled with a dense fibrous mass, and surrounded with cheesy matter. The radial cartilages were eroded.

Sub-Coracoid Dislocation of Humerus.—Dr. LANGE recited the history of a man, aged forty, who had his humerus dislocated. Before reduction the arm was kept in an elevated position. Any attempt to lower it caused severe pain. It was reduced without difficulty by steadying the body, making extension outward, and manipulation.

Large Fibro-Cystic Mammary Tumor.—Dr. A. C. POST presented a mammary tumor, weighing nineteen pounds, which he removed from a woman sixty years of age. It first appeared fifteen years ago, and was slow in its growth till three years ago, when it increased rapidly. Death took place one hour after removal.

Fatty Degeneration of Liver in Yellow Fever.—Dr. T. E. SATTERTHWAITE presented a liver obtained from a woman who died of yellow fever in this city. She entered the Presbyterian Hospital after suffering for five days from headache, chills, and sweatings. Temperature, 105°. A diagnosis of malarial fever was made. As the case advanced, the temperature fell to 101°. The urine contained 50 per cent. of albumen. A diagnosis of yellow fever was made on the ninth day of the disease, after the appearance of black vomited matter. Previous to death, there was suppression of urine and jaundice.

Autopsy.—Liver weighed 100 oz., and was characteristic of the disease. The causes of death were uræmia and cholesteræmia. The brain and spinal cord were not examined.

Foreign Body in Eye; Perforation of Lens.—Dr. H. KNAPP presented an eye containing a foreign body which had been in the globe two years. It was of interest in connection with a similar case presented to the society in which the foreign body impinged on the retina, and gravitated to the ciliary processes. Sympathetic irritation occurred in that case after six years. The case under immediate observation occurred in a man aged sixty. He was seen by Dr. Knapp eight months after the injury. The lens was opaque and irregularly contracted; no foreign body could be made out. He was again seen last June—the ball was soft, but there was a tenderness in the ciliary region. It was thought best to remove the globe. In the ciliary processes the foreign body laid loose but attached. Dr. Knapp was of opinion that it penetrated the lens, but remained attached to it for some time, then dropped down. He was inclined to this view from the fact that he saw a case under the care of Dr. Pooley, in which such an occurrence was noted. In that case cyclitis occurred after the body dropped down. The eye was removed. It was rare to see cases in which foreign bodies rested so long on the ciliary processes without giving rise to cyclitis as in the two cases reported.

Exophthalmos.—Dr. E. C. SEGUIN presented the photograph of a man aged thirty, the subject of exophthalmos. He was seen at Manhattan Eye and Ear Infirmary by Dr. Webster, and transferred to Dr. Seguin's department. The sight of the right eye was impaired, due to atrophy of the optic nerve. The neck was normal. Pulse 92 to 96. The eye did not pulsate.

Dr. KNAPP had never seen atrophy of the optic nerve in Graves's disease. He thought that the condition in the case presented was due to the stretching of the nerve from the exophthalmos.

Dr. BRIDDON referred to the case of a woman who had a pulsating exophthalmos supposed to be due to an orbital aneurism. The carotid was tied. The pulsation ceased after the operation, but shortly afterward the patient died, and at the autopsy no sign of aneurism could be found anywhere.

Dr. KNAPP said that in sixty cases of pulsating exophthalmos no aneurism was found. In twelve the common carotid artery communicated with the cavernous sinus. In half of the cases the carotid was tied with good success. In one case there was a relapse. He doubted Dr. Seguin's diagnosis of Graves's disease, but was disposed to consider it exophthalmos. In answer to a question, he said monocular exophthalmic goitre existed. In exophthalmos, an interesting point to be noticed among the earlier symptoms was that the levator of the lid and the superior rectus did not contract equally. It would be found that the eyelid would be drawn up and expose an abnormal increase of the sclerotic. In answer to a question from Dr. Seguin, he said that a bruit occurred in the majority of the cases of exophthalmos.

(Since the meeting of the society the case was seen by Dr. Knapp, who coincided in the diagnosis of Graves's disease.)

Cancer of Stomach, with Obliteration of the Pancreas.—Dr.

Beverley Robinson presented specimens from a man aged twenty-eight, who died in St. Luke's Hospital. There was cancer of stomach and obliteration of the pancreas. He asked the opinion of the society as to whether the emaciation, which was marked, could be due to the deficiency of the pancreas. Different cases were cited by members to prove that there was no connection between emaciation and absence of the function of the pancreas.

Stated Meeting, October 8, 1879.

Dr. Joseph M. Howe, Vice-president, in the Chair.

Infantile Empyema.—Dr. J. Lewis Smith presented the lungs of a child aged eighteen months, who died from empyema. Before death there were doubts as to the diagnosis, other observers believing there was pneumonia. The prominent symptoms were a temperature of 104⅘°, dull percussion over right side, with moist rales and bronchial respiration. The hypodermic needle gave no results when introduced. Death took place six weeks from the attack. No fremitus could be discovered when the child cried.

Dr. Janeway said fremitus was no guide in the diagnosis of fluid in the pleura. Some discussion took place in regard to the treatment of empyema. Drs. Smith and Post favored a fistulous opening. Dr. Janeway thought that in the beginning a few aspirations were of benefit in reducing the size of the sac. Subsequently a fistulous opening was indicated.

Penetrating Wound of Head—Recovery.—Dr. R. E. Van Gieson, of Greenpoint, presented a patient who was the subject of a remarkable penetrating wound of the head. He was a ship-carpenter, forty years of age, who on July 1st fell from a considerable height and struck a projecting spike. The spike was four inches in length, and over one third of an inch wide. It entered immediately in front of the left meatus auditorius externus, and was so firmly held by the tissues that it was with difficulty removed. The finger was subsequently introduced for three inches. The man did well and completely recovered, with the exception of blindness of the eye on that side.

On July 10th an opening was established from the nose through the track of injury. At no time were there any cerebral symptoms. The patient said that he was able to see immediately after the injury, but Dr. Van Gieson doubted the truth of the remark.

Dr. Rossa had examined the case, and found white atrophy of the disk. When the man was presented to the society the only sign of injury was a cicatrix about an inch in front of the meatus auditorius. The course of the spike was directly inward, at right angles to the plane of the side of the head.

Sarcoma of Lung.—Dr. Van Gieson presented a specimen with the following history: A man, aged thirty, with no history of cancer or tubercle, came under observation July 1, 1879. He was seemingly in fair health, but had been confined to bed some time previously with what was thought to be pleurisy and organic disease of the heart. When he was seen by Dr. Van Gieson he complained of pain on the left side anteriorly, shooting through to the shoulder-blade, accompanied by severe hacking cough, but no expectoration. The face was bluish and œdematous each morning. The left arm was œdematous and painful. Bluish spots were found on the left chest.

July 2d.—Urine normal. After a careful examination of the chest the left infra-clavicular region was found very dull on percussion. The right clearer, but less than normal. Left side measured an inch and a half more than the right. There was slight impulse over the left infra-clavicular region. The apex of right lung dull, but less so than the left. No change of the line of dullness with varying position. The radial arteries had a similar impulse. The glands of neck and axilla not enlarged. No night sweats. Appetite good.

5th.—Dr. E. G. Janeway saw the case, and pronounced it to be malignant disease of the lung, or possibly an aneurism. The impulse under the clavicle was barely perceptible. Several punctures were made with a hypodermic needle, but without any result.

7th.—Ordered the patient to go to Bay Shore, Long Island, his father's residence.

August 30th.—Area of dullness much increased over both lungs. Œdema of right and left arm. Increased infra-clavicular impulse. No respiratory sounds over the whole of left lung. The left pupil dilated and the eye-ball protruding.

September 11th.—Died. The patient was under the care of Dr. Vandewater, of Bay Shore, who reported that the eyeball became very prominent a few days before death, and that the blueness of the face and upper extremities was constant toward the close.

Autopsy.—On making the initial incision a flow of thick milky juice came from near the sterno-clavicular articulation. A hard white deposit at the same place glued the muscles to the chest wall. The bones were softened and broke down under the pressure of the finger. On elevating the sternum it was found to be adherent for two thirds of its length to a firm tumor which involved nearly the whole of the left lung, and strongly adherent to the chest-wall and pericardium. The lower part of the pleural cavity contained ten ounces of red fluid. An incision, an inch and three quarters deep, was made over the heart before that organ was reached. It was small, contracted, and covered with villous exudation. The pericardium was lined with the same material, but not adherent to the heart. The left lung was nearly completely invaded by the malignant growth. The apex of the right lung was involved. The right pleura contained twelve ounces of fluid.

Dr. Janeway said the case of Dr. Van Gieson was the second one of the kind that he had seen within a year. In the other case the upper part of the lung was flat on percussion. The most distressing symptoms were nausea and vomiting, due to pressure on the pneumogastric nerves. During the past three years he had seen three such cases.

Disease of Coccyx.—Dr. Post presented a small specimen of bone which he had removed from the coccyx of a woman twenty-five years of age. The coccyx was injured two years previously, and there resulted an abscess, which reopened at each menstrual period. After the diseased portion of the coccyx was removed, the cure became complete.

Lupus.—Dr. Post presented a sketch of a woman, aged sixty-one, who suffered from lupus, which destroyed her nose and two fifths of her face. He removed the whole of the diseased tissues, but, as a preparatory operation, performed tracheotomy. He proposed, in case of return, to use Paquelin's cautery, and eventually to lessen the deformity by means of a plastic operation.

Uterine Fibroid.—Dr. Post presented fragments of a uterine fibroid, which occurred in a woman aged forty-eight. It projected into the vagina. A few days before operating signs of blood-poisoning appeared. The tumor was removed with a good deal of difficulty. Dr. Thomas's serrated scoop was found of decided benefit in separating the attachments. The patient recovered.

Enterolith; Invagination of Intestine.—Dr. Charles A. Leale presented a specimen of intestinal calculus with the following interesting history: A woman, seventy-nine years of age, suffered for the past twenty years with attacks of bilious colic. On August 20, 1879, while in the country, she had a severe attack, which lasted all day, and was followed by dysentery, which continued six weeks.

September 1st.—Returned to city; was jaundiced. Had complete intestinal obstruction, with the occasional discharge of bloody mucus. Pain localized at the ileocæcal valve.

10th.—All attempts at relieving the obstruction failed. The rectal tube could not be introduced beyond the sigmoid flexure.

25th.—The pain, which at first was felt at the ileocæcal valve, extended along the course of the colon, and finally reached the upper part of the rectum. A bi-manual exploration was made, one hand being in the rectum and the other over the abdomen, when it was discovered that a fold of invaginated intestine existed at the sigmoid flexure. This was reduced, and two quarts of pasty fæces removed. In a few hours the obstruction returned with the former distressing symptoms of violent tenesmus.

28th.—Condition remained unchanged.

October 1st.—Seen in consultation by Dr. Austin Flint. The feeble state of the patient rendered any attempt at reduction of the invagination undesirable.

6th.—Had rallied sufficiently to permit of another rectal examination. A hardened mass was found presenting through the invaginated intestine, which after removal proved to be an enterolith two and a half inches long and as thick as the finger. It contained a gall-stone as a nucleus, and around it were concentric layers of stercoraceous matter half a line in thickness.

After the removal of the stone all the symptoms were relieved and the patient passed on to recovery. The explanation of the case would seem to be that, on August 20th, the gall-stone passed into the intestine and subsequently became engaged at the ileocæcal valve, causing invagination, the cæcum passing along the colon and eventually reaching a point within five inches of the anus.

During the course of the case, stercoraceous vomiting was continuous, and by this means a certain amount of the fæces were removed. Copious drinks of warm water relieved the distress and were of advantage in removing more thoroughly the feculent matter which regurgitated into the stomach.

A microscopical examination of the specimen was made by Dr. P. C. Cole, who reported that the nucleus was made up of cholesterine and granular matter colored with biliverdine.

Cerebral Tumor.—Dr. R. W. AMIDON presented specimens of a tumor in proximity to the pons varolii, which replaced the right third nerve. The history of the patient indicated epilepsy and pigmentation of the face. A microscopic examination failed to decide whether it was syphilitic or tubercular in character.

AMERICAN GYNECOLOGICAL SOCIETY.

The meeting of this society in Baltimore, in September, was mentioned in the last number of the "Journal"; Dr. T. G. Thomas, President, occupied the chair. There were present thirty-one members, besides numerous guests.

Addresses of welcome were delivered by Professor W. T. Howard, and Professor Gilman, of the Johns Hopkins university.

At the first day's session the opening paper was read by Dr. J. P. White, the subject being Intra-Uterine Medication. He advocated its use very strongly. Previous to a discussion upon it, another paper on Intra-Uterine Medication by Iodized Phenol was presented by Dr. Battey. In the discussion Dr. Sims was inclined to give preference to the curette over medication; both he and Dr. Taylor had obtained good success, in cervical catarrhs, by dilating the neck and applying the actual cautery. Dr. Howard thought that a great essential in treatment was first to get rid of uterine flexions and misplacements. Dr. Bozeman gave a like opinion. Dr. Barker spoke highly of the use of iodoform cones introduced into the dilated cervix.

Dr. Byrne thought that a perfectly healthy uterus would not tolerate any liquid in its cavity, and that the further the departure from health, the greater the tolerance.

Dr. Goodell referred to the danger there was in the use of tents. He thought that the pain often experienced by women when the probe passes the internal os was due to a fissure or tender cicatrix at that point. Dr. Reamy had given up sponge tents for laminaria; the frequent use of these alone would, he thought, often cure a catarrh.

Dr. Thomas was opposed to intra-uterine medication except in rare cases, such as those of true idiopathic cervicitis. He thought that the pain caused by the passage of the probe through the internal os was due to spasm.

The next papers were, one by Dr. Jenks on the Treatment of Puerperal Septicæmia by Intra-Uterine Injections; one by Dr. Chadwick on Idiopathic Septicæmia in Gynecological Practice; and a case of Puerperal Septicæmia, reported by Dr. Sinclair. In the subsequent discussion Dr. Chadwick advocated the use of permanganate of potash, owing to the fact of its color serving as a guide to how long the injection should be continued—the solution returning a dirty yellowish color so long as there was anything to be washed out. Dr. Engelmann had seen bad results from carbolized injections, and Dr. Barker believed that their use was of value in only a small number of cases. Dr. Howard believed in vaginal douches and, in case of septic fever, intra-uterine injections. Dr.

GOODELL thought that the occasional poisoning from carbolized injections was due to the fact that carbolic acid is not easily soluble in water. He recommended the addition of glycerine, or the substitution of permanganate of potash. Dr. ERICH recommended suppositories of boracic acid in the vagina as disinfectants. Dr. THOMAS believed in intra-uterine injections in puerperal septicæmia, and recommended in addition Kibbe's cot and quinine to keep the temperature below 100° F.

On the second day, the first paper read was by Dr. BUSEY and was entitled "A Contribution to the Pathology of the Cicatrices of Pregnancy." He presented photographic illustrations of sections of striæ and also original microscopical examinations of the striæ and integument. His conclusions were that the striæ are not caused by rupture of the Malpighian layer, as is generally believed, but are localized atrophies of all the constituent layers of the integument, with compression and partial obliteration of the lymph spaces. Dr. MUNDÉ read a paper upon Prolapse of the Ovary, giving the first complete account of this affection that has ever been made. In the subsequent discussion Dr. BATTEY disagreed with Dr. Mundé on some points, and Dr. SKENE thought that a persistent pain after defecation was a sign of prolapse of the ovary which should receive greater prominence. The annual address was delivered by the President, Dr. THOMAS. It was an eloquent presentation of the important position of gynecology, its future, and its relations to general surgery.

In the afternoon session Dr. BYRNE gave an account of a new method of performing kolpo-cystotomy, using the galvano-cautery. He claimed that the operation should be performed in all serious cases of cystitis.

Dr. SINCLAIR read a paper on the measurements of the uterine cavity in child-bed, giving the statistics of one hundred and eight cases. He found that the average length of the uterine cavity three weeks after delivery was 3·02 inches.

On the third day the annual business meeting was held. The following officers were elected: President, Dr. J. Marion Sims; Vice-Presidents, Drs. W. T. Howard and Robert Battey; Council, Drs. W. Goodell, E. W. Jenks, A. D. Sinclair, and A. J. C. Skene; Secretary, Dr. J. R. Chadwick, of Boston; Treasurer, Dr. P. F. Mundé, of New York. Drs. R. Stansbury Sutton, J. W. Underhill, John Scott, and Edward L. Duer were elected Fellows of the Society.

At the close of the business meeting the doors were opened again for papers and discussions.

Dr. I. E. **Taylor** read a paper on the early application of forceps in the first stage of natural labor. He believed that the forceps should be applied within the uterine cavity whenever there were symptoms of an approaching tedious labor. Dr. **Howard** advocated the hot-water douche and version in preference to the forceps. Dr. **Reamy** disagreed somewhat with Dr. Taylor.

Dr. **Goodell** presented the subject of elongations of the cervix uteri, his paper being based on numerous cases. He advocated amputation by the galvanic cautery in certain cases.

Dr. **Johnson** read a valuable paper on mismanaged labor as the source of much gynecological practice.

Dr. **Reeve** reported a case of extra-uterine pregnancy.

After some further discussion and farewell remarks from Dr. **Thomas**, the Society adjourned to meet next year in Cincinnati on the first Wednesday in September.

NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, October 7, 1879.

Dr. A. J. C. **Skene**, President, in the Chair.

Fibroma of the Uterus complicated by Pregnancy.—Dr. W. T. **Lusk** presented a specimen which had the following history: In the latter part of August he was called by Dr. Kessler to see a lady who had a fibroma of the uterus that he had been treating by the use of ergotine, administered hypodermically. The treatment was successful up to about four months before he saw the case, when, by reason of the improved condition of the patient, and the almost entire disappearance of the tumor, Dr. Kessler sent her to the country. She went to the country early in June and returned to the city early in July, when it was found that the tumor had increased in size, extended to about three inches above the umbilicus, and, from the feel of the cervix, pregnancy was suspected. Dr. Lusk then saw the case, and the conclusion was reached that it was a case of fibrous tumor of the uterus complicated by pregnancy. There were no fœtal movements nor *ballottement*. The case went on, and in the latter part of September the patient was delivered of a fœtus apparently about four months old. There was no hæmorrhage from the beginning of labor up to the termination of the case. The placenta not coming away, Dr. Kessler gave ergot, used hooks, and, failing to remove it, called Dr. Lusk three days after the patient's confinement, who determined that the proper course was to proceed at once to its removal. The odor from the patient was very disagreeable. An anæsthetic was administered, but the placenta was not reached by the hand, although it was introduced into the vagina, and two fingers into the uterus. A portion of the placenta was then removed by means of Dr. Thomas's wire curette, but the instrument was not long enough to remove it entirely. Further operation was postponed; the patient came from under the influence of the ether, but soon had a severe chill, and her temperature rose to 107° Fahr. The uterus was washed out with carbolized water; large pieces of the placenta came away; alarming collapse occurred; but the patient rallied, and on the following day the operation for removal of the placenta was repeated by means of a longer but similar instrument than the one first employed, yet it was not all removed. Antiseptic injections were kept up; the patient's general condition seemed much improved, but at the end of the second day she suddenly died. Autopsy revealed a small portion of retained adherent placenta, but there was no evidence whatever of inflammation either of the uterus or of the peritonæum. He regarded it as a case of pure septicæmia, produced by drawing the decomposing placenta over and, as it were, rubbing it into the mucous membrane covering the fibrous tumor. The patient seemed to die of the intense septicæmia developed during the last twenty-four hours of her life.

Dr. Kessler on invitation stated that he first recognized the tumor in January of the present year. He then began to treat it by giving a hypodermic injection of ergotine, first daily, then every other day, giving in all seventy-eight injections, and on the 1st of May the tumor was not more than three inches in diameter. In January, when treatment was first begun, the tumor reached above the umbilicus. He discontinued the injections in May, resumed them in June, and in July his patient was so well that he sent her to the country. When she returned, he found the tumor very much enlarged, and diagnosticated the complication pregnancy. He then called Dr. Lusk in consultation, who has given the subsequent history of the case, with the result of the autopsy.

Ovarian Cyst in a Child three years and five months old.—Dr. T. G. Thomas presented an ovarian cyst that was removed at an autopsy made on the body of a child three years and five months old. It was first noticed when the child was one month old, and it gradually grew and destroyed life at the age mentioned.

Sarcoma of the Kidney and Liver.—Dr. A. Jacobi presented a sarcomatous kidney and liver removed from a prematurely-born child. The mother, about twenty-four years old, healthy, had borne three healthy children previous to pregnancy with the fœtus containing the specimens. After her third confinement she was attacked with typhoid fever, had relapses and an attack of colitis, and, before she had fully recovered, again became pregnant, January, 1879. She at once began to grow stout, and this went on increasing until she became so uncomfortable that the only sleep she could obtain was while sitting in a chair. In September last, fœtal movement ceased, she had attacks of abdominal pain, with elevation of temperature, and it was concluded advisable to empty the uterus promptly, which was done in forty-five minutes. The abdomen offered an obstruction to delivery; the tissues of the child were found very soft, the thigh being nearly severed from the body by slight traction made in turning, and the fœtus weighed nine pounds. There were nodules of the growth in the left kidney and in the liver, of variable size that of a pea to a hazel-nut. The suprarenal capsule of same kidney was also infiltrated with sarcomatous materi

Dr. Jacobi then made extended remarks, basing them on the theory advanced by Cohnheim with reference to the probable explanation of the occurrence of the disease in this case, and also why primary carcinoma and sarcoma of the kidney occurred in the vast majority of cases in children under ten years of age.

Abscess in the Left Broad Ligament, with Discharge into the Rectum and subsequent Formation of an Abscess, in the Groin, which became filled with Gas.—Dr. T. G. THOMAS related a case which he saw with Dr. R. O. Mason. The patient had been under the care of a homœopathic practitioner, who had spent about fifteen minutes each day in trying to effect a permanent reduction of what he called a left inguinal hernia. When Dr. Thomas saw the case he found a tumor evidently phlegmonous in character rather than hernial, although it gave resonance on percussion. Four weeks before, an abscess had formed in the broad ligament in that side and had discharged into the rectum. The discharge of pus into the rectum, giving the patient no marked inconvenience, continued, until suddenly the so-called hernia appeared in the groin. This was finally opened; about three ounces of pus escaped, together with a large quantity of exceedingly fœtid gas. There was no escape of fæcal matter, nor has there been, although there is escape of gas from the opening every time the patient experiences a desire to pass wind per anum. He thought that, without the previous history, the case would have been puzzling, and it was mainly with reference to diagnosis that it was interesting.

Sciatica probably caused by Extra-uterine Pregnancy.—Dr. THOMAS also reported a case of probable extra-uterine pregnancy which had some peculiarities. A lady, who was the mother of several children, became pregnant about four years ago, as she supposed, for the reason that she suffered from the usual symptoms of pregnancy, and her abdomen began to enlarge as formerly. Her menstruation ceased as usual, but it returned in an irregular manner. She suddenly lost blood in gushes, and about that time began to suffer excruciating pain along the course of the right sciatic nerve. After a time the tumor not only ceased to grow, but gradually diminished in size, until it reached that of an ordinary duck's egg. On account of the intense pain in the region mentioned, the woman became an opium-eater. The diagnosis of extra-uterine pregnancy could not be made positive, for the woman is living, but he thought it altogether probable that the sciatica depended upon mechanical irritation produced by extra-uterine pregnancy.

Irritability of the Bladder immediately relieved by Dilatation of the Urethra.—Dr. J. Foster Jenkins, of Yonkers, N. Y., reported a case of irritability of the bladder that was relieved at once by partial dilatation of the urethra by means of a hairpin.

Dr. Skene said that when there is residual urine in the lower part of the urethra, as the result of stricture at the meatus, immediate relief might be expected from dilatation; but he thought such cases are rare.

The society then went into executive session.

Annual Meeting, held October 21, 1879.

Dr. A. J. C. Skene, President, in the Chair.

General Peritonitis, Ovaritis, and Abscess Opening into the Abdominal Cavity.—Dr. William T. Lusk presented a specimen removed from the body of a woman who was brought into the hospital with symptoms of general peritonitis, and in a nearly moribund condition. No diagnosis was made regarding the condition of the pelvic organs. At autopsy there was found general peritonitis, and a large quantity of pus in the pelvic cavity. The uterus and the uterine extremities of both Fallopian tubes were perfectly normal. The outer extremities of the Fallopian tubes were dilated and filled with pus. Both ovaries were the seat of abscess. Upon one side there was a small opening from the abscess into the abdominal cavity. No history could be obtained, except that the patient had been sick three weeks, and, three days before admission to the hospital, she experienced a sensation as though something had given way in the lower part of her abdomen, and that fluid was pouring into the cavity. It was a question which was primary, the general peritonitis or the ovaritis.

Dr. NOEGGERATH thought, from the fact that there was such marked dilatation, that the primary disease was a double salpingitis, which had existed certainly longer than three weeks. Acute suppurative inflammation of the ovary, except in the puerperal state, so far as he knew, occurs almost exclusively after exanthematous or other fevers, such as smallpox, scarlet fever, measles, and typhoid fever. As a rule, acute inflammation of the ovary is associated with affection of the Fallopian tubes, and that it is secondary is proven by the fact that, salpingitis without ovaritis is found very much more frequently than ovaritis without affection of the salpinx.

Dr. H. T. HANKS referred to a case in which autopsy revealed an ovarian abscess that had burst into the peritoneal cavity and caused death. There were symptoms of pelvic peritonitis, but no definite diagnosis could be reached by vaginal examination, on account of the intense pain produced by the touch.

Fibroma of the Abdominal Wall.—Dr. H. T. HANKS presented a fibroid tumor that he had removed from the right iliac portion of the abdominal wall of a woman twenty-four years old. She noticed a small tumor in the lower part of the abdomen to the right of the median line about one month before pregnancy, but it remained apparently unchanged until about the sixth month of utero-gestation, when it began to grow rapidly, and at the time of the birth of the child was about three inches in diameter. It occasioned no inconvenience during labor. Subsequently it became so large as to be a source of annoyance, and it was removed. It measured five and a half inches in breadth by six inches in length and three inches in thickness, and on microscopical examination, made by Dr. T. E. Satterthwaite, proved to be a simple fibroid tumor. The patient made a good recovery. The attachment of the tumor to the muscular fibers near Poupart's ligament was quite firm. Drs. C. C. Lee and T. Addis Emmet saw the case with Dr. Hanks, and were of opinion that the tumor had its origin in the lower abdominal cavity. Dr. Janvrin also saw the case, and coincided with Dr. Hanks in the opinion that the tumor sprang from the abdominal muscles. All advised an operation.

Drs. EMMET and LEE spoke of the difficulty in diagnosis, and of the probability of the tumor being attached to the face of the ilium.

Retro-Uterine Abscess simulating Enterocele.—Dr. T. ADDIS EMMET presented a specimen removed from the body of a woman upon whom he had operated, at the Woman's Hospital, for a supposed enterocele. In the main there was an error in diagnosis. In June, 1866, the patient, then aged twenty-three, married and sterile, consulted him, and he found a mass which occupied the pelvic cavity on the left side, extending low down in the posterior *cul-de-sac*, and upward to a line in a level with the umbilicus, and, although of a doubtful character, it was supposed to be a multilocular tumor of the ovary. The uterus was four inches deep.

In February, 1867, he again saw the case, when he found that the general condition of the patient had improved greatly, and that the tumor could no longer be felt from the *cul-de-sac*. In 1873, as the patient said, she consulted Dr. E. R. Peaslee, who told her that she had a fibrous tumor, and also that she had had an abscess, which had emptied into the rectum, as he found an opening in the bowel. In June, 1879, Dr. Emmet saw the patient again, and she complained that something came down that gave her great pain and inconvenience while walking, or standing, or sitting. From a hasty examination he supposed it was a rectocele. In September he saw the patient again, and found what at first he supposed was a rectocele, but soon became convinced that it was not a rectocele, because there was no prolapsus uteri, and from the attachment of the mass which pressed the uterus against the pubis, it became a question whether it was enterocele or a cystic growth in the vaginal wall. The idea that it was a cyst was abandoned, because it could be emptied by pressure, and would again fill slowly. He thought it was an enterocele from the fact that when it was squeezed the patient vomited, and when it was put back it had the feel of a mass of intestines; gave a gurgling sound and had a vermicular movement. From the fact that the woman's life was made miserable by this condition he felt justified in operating, intending, if it proved to be a hernia, to dissect the tumor up to the neighborhood of the uterus.

cut off the peritonæum and bring the edges together, and complete the operation as for rectocele. On cutting down upon the mass it was found to be peritoneal; the tumor, which was about the size of an ordinary tumbler, was dissected out, the dissection being carried upward to the end of the vagina. The operation was exceedingly difficult, and the hæmorrhage was profuse. A gurgling sound could be heard in the mass; it had a vermicular movement, and he did not open it, because he felt sure that it contained intestines, and at one point it seemed as if a knuckle of intestine was adherent. The peritoneal sac, therefore, was returned, and the opening in the vaginal wall was closed with sutures from the fourchette well up behind the uterus. The patient did well for two or three days, when the pulse rose, at one time reaching 200; her temperature became high, and she had all the symptoms of peritonitis, except pain. She died on the fifth day after the operation. Dr. Emmet thought that, if he had opened the sac, possibly the woman's life might have been saved.

Dr. NOEGGERATH, who was present at the autopsy, on invitation by Dr. Emmet demonstrated the specimen. He said there were evidences of old and general peritonitis, but no fresh peritonitis. There was a fistulous opening into the rectum. There was a very old abscess behind the uterus, the lower wall of which formed the upper wall of Douglas's *cul-de-sac*. Douglas's *cul-de-sac* had been carried down. It contained gas and a blood fluid, and, therefore, before the operation, had the feel of an enterocele. There was a small opening leading from the shut-in portion of the peritonæum to the old cavity, through which fluid was squeezed when the tumor was pressed from below during life.

Dr. C. C. LEE said he saw the case before and during the operation, and then thought it was one of enterocele. The result, however, taught him more fully than ever the value of the crucial test of puncturing the projecting mass by means of an hypodermic needle. If gas only had escaped, it might have been regarded as certain evidence that the mass was an enterocele. Now that we had the light shed by *post mortem*, if a gush of bloody fluid had followed, the propriety of opening the tumor would have been more evident.

Dr. **Lusk** referred to a case in which puncture by the hypodermic needle prevented him from cutting into what he supposed was an abscess, but which was an enterocele.

Dr. **Noeggerath** remarked, regarding Dr. Lee's proposition to puncture with the hypodermic needle, that he should hesitate to do so for the reason that fluid is liable to escape when such puncture is made from below, as through the vagina. It was much safer to make such an exploration through the abdominal walls, and he should hesitate to do it from below, especially if there was a possibility that enterocele existed.

Dr. H. F. **Walker** remarked that the escape of gas from the hypodermic needle would not make the diagnosis clear, for there would be nothing to prove that anything except an enterocele was being emptied.

Dr. **Lee** thought the point made by Dr. Noeggerath was well taken, and yet not conclusive; for, although the operation was dangerous, he had seen two cases in which it was resorted to without bad results. The objection offered by Dr. Walker, he thought, was not valid, for the reason that, although an emission of gas might occur, a gush of bloody fluid would not be obtained from an enterocele.

Dr. **Noeggerath** thought that gas would not have been suspected in this case because the tumor gave a dull sound on percussion, and the gas was in the upper part of it.

The society then went into executive session.

Bibliographical and Literary Notes.

Art. I.—*Transactions of the American Medical Association.* Vol. xix., 8vo., pp. 900, 245. Philadelphia: Printed for the Association, 1878.

In the "Address of the President," Dr. T. G. Richardson, questions relating to original investigations, medical education, and state medicine or public hygiene, are fully discussed. The President thinks the general Government ought to aid certain individuals in original research.

Dr. A. L. Loomis delivers the "Address in Practice of Medicine, Materia Medica, and Physiology." He mentions a few new articles which have been recommended for medical purposes, such as jaborandi, blatta orientalis—a preparation of the Russian cockroach—thymol, crysanthin, coto, viburnum prunifolium, hydrobromic acid, grindelia robusta, etc. He devotes the most space, however, to the discussion of climatic treatment of phthisis. Dr. Loomis describes three varieties of consumption, namely, catarrhal, fibrous, and tubercular. It is stated that the catarrhal variety outnumbers either of the other forms. He does not think that changes of climate can affect favorably the tubercular form; but changes of climate may be followed with marked improvement in the other forms. He says: "With our present knowledge of the etiology and morbid anatomy of this disease, we must believe that the primary catarrhal processes, as well as the later phthisical development, depend to a very great extent upon atmospheric influences." The advice given by the author with regard to sending patients to elevated districts, mountains, pine forests, and the sea, is very interesting. He shows that the ozone common to these regions destroys organic substances and noxious germs. *Sanitaria* are recommended for the treatment of phthisis. In this department Dr. F. H. Davis contributes "Some Facts regarding the Relation existing between the Prevalence of Pulmonary Tuberculosis and Hygienic Surroundings of the People." He thinks an out-of-door life in rough cabins, tents, or exposed to all weather, will contribute to recovery quite as frequently as the modern treatment by change of climate to mountains and other parts. Dr. John V. Shoemaker presents a good paper on "Ringworm in Public Institutions." Dr. Charles N. Palmer reports two cases of "Goitre successfully treated by Intra-glandular Injections of Ergot." Dr. Thomas F. Rochester reports an interesting and unique case of "Separation of the Ileum and Spontaneous Occlusion of the Divided Extremities, with Pathological Specimen." The only remaining article in this section is a "Syllabus of a Lecture on the Morphology of Syphilitic Blood," by Ephraim Cutter, M. D.

Dr. Henry H. Smith delivers the "Address on Surgery and Anatomy. The Pathology of the Bones." This is an elaborate and exceedingly interesting paper in which the pathology of tubercle in general is discussed, together with the treatment of tubercular disease of bones.

The author seems to believe in the older idea that in Pott's disease, morbus coxarius, and certain other joint affections, a scrofulous cachexia and tuberculous deposit exist, the injury which sometimes precedes being merely an exciting or determining cause. Dr. Smith presents his view of the question with great skill and makes it appear very probable. Six plates, comprising many figures, embellish the text. Dr. S. H. Weeks writes on "Septicæmia following Resection of Bones." In drawing the distinction between pyæmia and septicæmia, he says the latter signifies "putrid blood," and the former "purulent infection." It may be remarked in this connection that the exact nature of pyæmia, so called, is not yet satisfactorily demonstrated—at all events, it is not simply pus in the blood. Dr. Henry A. Martin contributes a very reasonable article on "Tracheotomy without Tubes"; and Dr. John T. Carpenter writes a paper on the "Identity of Hospital Gangrene and Diphtheria." In a paper on "Prophylaxis of Septicæmia in Surgery," by Dr. E. M. Moore, the author reports the successful employment of carbonic acid gas in a case of ovariotomy. Dr. Julius F. Minor writes on "Extirpation of the Thyroid Gland." Dr. B. A. Watson contributes an elaborate article on "Disease Germs; their Origin, Nature, and Relation to Wounds." He advocates the antiseptic treatment of wounds after the method of Lister. Theodore A. McGraw presents a paper on the "Diagnosis and Treatment of Malignant Growths," in which he recommends the early removal of all tumors, ulcers of a doubtful character, warts on the lip, etc., etc. He says, "*in no case should the diagnosis be determined by postponing treatment in order to watch developments.*" Dr. Henry O. Marcy, in an elaborate article on "The Radical Cure of Hernia by the Antiseptic Use of the Carbolized Catgut Ligature," cites two cases of strangulated hernia in which, at the time of operation, the opening was closed with the catgut ligature, with cure. He does not think it will untie or absorb until union takes place. Dr. Frank H. Hamilton writes an interesting article on "Hallux Valgus, or Abduction of the Great Toe; its Etiology and Pathology, and the Value of Resection as a Remedy." Ten uncomplicated cases with no failures are given. Dr. Charles C. F. Gay, in a paper on "Excision of the Diaphysis of the Tibia," cites two cases resulting in osseous regeneration. Dr. Alfred C. Post writes a short article on "Exsection of the Articular Extremities of the Phalanges of the Fingers and Toes, for the Relief of Deformity of those Members." Dr. Frederick Hyde writes on "The Process of Repair in Wounds, with and without Antiseptic Treatment." He thinks the treatment should be in accordance with the nature of the case, and that antiseptic treatment may not always be desirable. It is especially adapted, he thinks, to open wounds. Dr. A. N. Blodgett reports "A Case of Carcinoma Conjunctivæ, together with some remarks upon Carcinoma in general." Several plates accompany the text, adding to the interest of the article. Dr. A. C. Post also writes on "Blepharoplastic Operations," illustrating his views with a number of plates.

In the section on Obstetrics, Dr. Edward W. Jenks, the chairman, read an elaborate paper on "The Causes of Sudden Death of Puerperal Women." The author makes four heads under which the causes of sudden death fall, namely: lesions of the circulatory, respiratory, and nervous systems, and puerperal septicæmia. These are subdivided into the more special causes. "Ovotomy" is the next address, by Dr. Theophilus Parvin. The paper is one involving a great deal of research, the subject being considered in all its bearings. Dr. Thaddeus A. Reamy writes on "Hour-glass Contraction of the Uterus prior to Expulsion of the Child." He cites several very interesting cases. Dr. Horatio R. Storer contributes an article entitled "The Frequently Gynæcological Origin of Inherited Forms of Strumous Disease (especially Phthisis), and the Consequent Indications for Treatment." He thinks syphilis intensifies the strumous diathesis, and is also intensified by the strumous diathesis when such diathesis preëxists. Dr. Levi F. Werner writes on the "Connection of the Hepatic Functions with Uterine Hyperæmias, Flexions, Congestions, and Inflammations," attributing the source of many of the above-named uterine affections, as seen in actual practice, to derangement of the liver. Dr. John C. Irish writes a paper on "Hysterotomy for the Treatment of Fibroid Tumors, with a Report of Fifteen Cases." Of the fifteen reported cases three recovered and twelve died. Of the fatal cases only one lived until the ninth day. While the author intimates that the operation will not furnish as brilliant results as ovariotomy, he believes "it to be destined to take its place among the recognized surgical procedures, and to render good service in the saving of human life." Dr. George J. Engelmann presents "The Difficulties and Dangers of Battey's Operation." The author has elsewhere * advocated the operation, and given the indications for its performance. In the article before us is presented the other side of the question in a fair and instructive manner. Dr. Albert H. Smith explains the "Application of the Rotating Burr for denuding Tissues in the Restorative Surgery of the Female Pelvis," and describes the instrument. It is a very ingenious contrivance, and seems calculated to be useful in cases not amenable to operation by the ordinary methods. Dr. W. W. Munson describes "A New Quill for the Deep Sutures in Perineorrhaphy," and Dr. William B. Atkinson read a paper written by Dr. Ellerslie Wallace on "A New Cephalotribe." The last-named instrument is constructed with teeth which prevent slipping of the instrument during traction. The teeth are fixed on a joint so as to lie flat during the introduction.

Dr. Walter Kempster delivered the "Address on Medical Jurisprudence, Chemistry, and Psychology." The question of organic disease of the brain in cases of insanity, and that relating to localization of function, are fully and ably discussed. But little is said on jurisprudence, and nothing on chemistry. The same gentleman also contributes "Notes on General Paresis of the Insane."

Dr. J. L. Cabell delivered the "Address in State Medicine and Public Hygiene." Among the several questions discussed is that "On the Theory of Contagium Vivum." This question is very elaborately discussed. As we have not space to follow the author through his labyrinth of research, we will merely state that he thinks it may fairly be inferred that there is a living contagion in the infectious fevers. Dr. Henry I. Bowditch presents "Studies of an Epidemic

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* "Amer. Jour. Obstetrics," July, 1878.

of Diphtheria, which prevailed at Ferrisburgh (adjacent to Vergennes), Vermont, during the Summer of 1877." The author believes every possible measure to prevent the occurrence of new cases during an epidemic should be taken. Physicians should avoid carrying the disease to others, especially puerperal patients. Public funerals, he thinks, very justly, should be interdicted. Next follows "Notes on Defective Drainage and Water Supply in parts of Indiana, Missouri, and Arkansas," being a brief article including an "Abstract of Communications received in reply to the Circular Letter of the Chairman of the Section on State Medicine and Public Hygiene." Dr. J. R. Black contributes a good article on "The Bearings of Hygiene on Therapeutics."

Dr. J. M. Toner makes a very full "Report on American Medical Necrology, 1878."

At the end of the volume is found a most excellent prize essay entitled, "Essays upon the Surgical Anatomy and History of the Common, External, and Internal Carotid Arteries, and the Surgical Anatomy, and Descriptions of the Innominate and Subclavian Arteries, giving an Analysis of 173 Dissections of these Surgical Regions of the Neck, and a Collection of 1,198 Cases in which the Results of Deligation of these Vessels are given, with other useful Data," by Dr. John A. Wyeth. It contains 245 pages and is illustrated by diagrams.

ART. II.—*Clinical Medicine: A Systematic Treatise on the Diagnosis and Treatment of Diseases. Designed for the Use of Students and Practitioners of Medicine.* By AUSTIN FLINT, M. D., etc. 8vo., pp. 795. Philadelphia: H. C. Lea, 1870.

THERE is every reason to believe that this book will be well received. The active practitioner is frequently in need of some work which will enable him to obtain information in the diagnosis and treatment of his cases with comparatively little labor. Dr. Flint has the faculty of expressing himself clearly, and at the same time so concisely as to enable the searcher to traverse the entire grounds of his search, and at the same time obtain all that is essential, without plodding through an interminable space. The work is decidedly systematic in its arrangement; it includes the whole domain of medicine, with mental diseases, and is not loaded down with extensive reports of cases.

The "Introduction" is devoted to definitions, methods of examination, rules for keeping records—which the author thinks contribute to success in many ways—symptomatology in general, the hygienic and medicinal treatment of disease, etc. This section should be read by every young practitioner, and we doubt not many older may receive some useful hints by its perusal. At the beginning of each section the significance of individual symptoms pertaining to the diseases of the section is given. The author, in describing the various diseases, explains the purport of symptoms and the objects of treatment sufficiently to enable the reader to understand his view of the pathology of the disease in question. We may observe that his views, as expressed here, are not very different from what is expressed in his other works, except that he keeps well apace with the innovations of the day. Dr. Flint's forte lies in his ability to so perfectly analyze a case as to make the diagnosis entirely clear. In his treatment of disease he is for the most part eminently sound. In some instances, perhaps, he could with advantage make his statements a little more explicit in the special methods recommended to be pursued.

There is but little in the book that we could wish to have different. In the treatment recommended for the early stage of simple meningitis the author advises the employment of blood-letting, the ice-bladder, and cathartics. We would venture to suggest, especially with children, that the bromides with ergot may safely take the place of the blood-letting—at least they are to be recommended on theoretical grounds. In this connection we may remark that the author's classification of the inflammatory diseases of the brain is much more simple than that in Ziemssen's "Cyclopædia." The author mentions the variable degree of tolerance of opiates in different patients affected with peritonitis. We are of the opinion that the difference in many cases is owing to difference in the absorbin power of the alimentary canal. For this reason the hypodermic employment of morphine in such cases would always b more exact.

It is unnecessary for us to take up the several sections seriatim, for the special views of Dr. Flint on certain mooted questions, such as tuberculosis, etc., are pretty well known by the profession, or at least ought to be. Suffice to say, the author's greatest strength is shown in the sections devoted to diseases of the circulation, diseases of the respiratory organs, and fever. Nevertheless, the work is very uniform throughout. It is pleasant to read the works of an author who evinces such honesty of purpose, and who seems so devoid of prejudice as does Dr. Flint, qualities so essential to a good diagnostician. The eye is once in a while irritated by the wrong application of a word. For instance, "numerous" is used several times when *many* or *numberless* would better express the idea. The word should be employed to qualify a collective noun—as a numerous class, a numerous family, etc., etc. The volume is presented in good style by the publishers, except that it appears, from the many typographical errors, to have been prepared rather hastily. By a slip of the pen, the author, in giving the rule for converting the F. into the C. scale of the thermometer, says, "multiply by 5, divide by 9, and subtract 32." The subtraction of 32 should be made before multiplication and division.

ART. III.—*The Principles and Practice of Surgery.* By JOHN ASHURST, Jr., M. D., Professor of Clinical Surgery in the University of Pennsylvania. Second Edition. Enlarged and thoroughly revised. 8vo. Pp. 1040. Philadelphia: Henry C. Lea, 1878.

THE second edition of this work exhibits a commendable effort on the part of the author to illustrate the advances made in surgical science and art during the seven years intervening since its first issue. All of the more important subjects have been freely revised, and new matter incorporated in place of that omitted. In this manner the bulk of the volume has not greatly increased. On looking over the subjects which have attracted most attention during the interval of the publication of these editions we note many evidences of the author's critical examinations of current topics. The judgment expressed upon questions still at issue is in general very conservative. New subjects are discussed in an impartial manner, and without that undue bias for preconceived opinions which mars so many practical works on surgery.

The only part of the volume upon which we shall venture a criticism, and which in our opinion fails to meet the wants of the rising generation of practitioners, is that relating to antiseptic surgery. Believing, as we do, that it is established beyond all doubt that suppuration from septic poison may be prevented, we hold that the surgeon who is fully impressed with this belief has tenfold the advantage and success of one who still thinks that suppuration of accessible surfaces is a necessity. The chapter on wounds contains the author's present estimate of the antiseptic treatment. In the first edition he stated that "the merits of the antiseptic method can not yet be considered as positively determined." In the second edition he states that "the alleged superiority of the antiseptic method can not be said to have been as yet demonstrated." The first statement was based on the fact that "other surgeons equally competent and careful have utterly failed in obtaining the promised results," and the latter on the additional fact that "results quite as good are obtained by surgeons who rely simply upon enforcing cleanliness and attending to the constitutional and hygienic condition of their patients." We do not think that either statement does exact justice to the antiseptic treatment. The failure of other surgeons to obtain the promised results is negative proof, and of no value in the face of many positive results; and the fact that cleanliness and hygienic conditions have given equally good results does not invalidate the claim of superiority on the part of the advocates of the antiseptic method. The proofs that wounds treated with antiseptics, as a rule, do not suppurate freely, even in a foul atmosphere, are overwhelming, and are now universally admitted. It is also true that those who place so much reliance on cleanliness, as Mr. Callender, first give the wound the benefit of an antiseptic douche. It is equally admitted by every clinical surgeon that mere cleanliness will not save a wound from profuse suppuration in a foul atmosphere, and it is under such circumstances that the wound may be protected by antiseptics, and hence the superiority of that method of treatment.

The effect of disbelief in antiseptic agents upon practice appears throughout the work. We are taught that "healing without any suppuration is almost never met with (at least in this climate) in wounds of the size of those in which ligatures are used, and no trustworthy evidence has yet been adduced to show that the use of ligatures increases the amount of suppuration," that "the *sole* object of opening a suppurating joint is to secure free drainage," that "the *only* special precaution to be observed in compound fractures is to so arrange the splints and bandages as to secure free drainage." Without multiplying these quotations, we may state that the surgeon who believes that he can prevent suppuration of accessible surfaces, regards free drainage of wounds, abscesses, and suppurating cavities as but the first step in the treatment. His constant aim is to prevent impending and control existing suppuration. Of the comparative success of these two methods of practice, no one can doubt.

Books and Pamphlets Received.—On the Connection of the Hepatic Functions with Uterine Hyperæmias, Flexions, Congestions, and Inflammations. With Appendix. By L. F. Warner, M. D., Boston, Mass., Vice-President of the Gynæcological Society of Boston, etc. Reprinted from the "Transactions of the American Medical Association," 1878.

Laceration of the Cervix Uteri. By A. Reeves Jackson, A. M., M. D., formerly Surgeon-in-Chief of the Woman's Hospital of the State of Illinois; late Lecturer on the Surgical Diseases of Women in Rush Medical College, Chicago; Fellow of the American Gynæcological Society, etc., etc. Read before the Chicago Medical Society, July 7, 1879. Reprinted from the "Chicago Medical Journal and Examiner," for August, 1879.

Buildings for Insane Criminals. By Walter Channing, M. D., Boston, formerly of the State Asylum for Insane Criminals, Auburn, N. Y., and of the State Lunatic Hospital, Danvers, Mass. A paper read at the Conference of Charities in Chicago, June 11, 1879.

Dermatitis Venenata; or Rhus Toxicodendron and its Action. By Roswell Park, A. M., M. D., Assistant to Chair of Anatomy, Chicago Medical College, Surgeon to South Side Dispensary, etc. Reprinted from "Archives of Dermatology," July, 1879.

Tracheotomy with the Galvano-Cautery. By William A. Byrd, M. D.

Affections of the Gall-Bladder tending to result in Cutaneous Biliary Fistula. By G. W. H. Kemper, M. D. Reprinted from "Transactions of Indiana State Medical Society," 1879.

Physiological Antagonism the Therapeutic Law of Cure. By Electus B. Ward, M. D. Read before the Detroit Academy of Medicine, June 10, 1879.

Report of the Special Committee on Medical Education before the Illinois State Medical Society, at its twenty-ninth anniversary meeting, held at Lincoln, May, 1879. E. Ingals, M. D., Chairman of Committee.

Fifteenth Report of the Trustees of the City Hospital, Boston. With Reports of the Superintendent and Professional Staff, rules for admissions and discharges, etc., 1879.

Catalogue of the Officers and Students in Cleveland Medical College and thirty-seventh Annual Announcement, 1879–'80.

The History of Massage. By Douglas Graham, M. D., Boston, Mass. Reprinted from the "Medical Record," August 16 and 23, 1879.

Annual Report of the Board of Health of the City of Pittsburgh, for the year 1878.

Report upon the Preventive Measures to be used in Limiting the Extension of Diphtheria within the Province of Nova Scotia.

Reports on the Progress of Medicine.

SURGERY.

CONTRIBUTED BY DRS. G. R. CUTTER AND E. FRANKEL.

Collodion as a Means of Compression for Aneurismal Tumors.—In Selion ("Ann. de Chim.") in a case of double aneurismal tumor of the aortic arch, with an external elevation, tried a new method of compression, applying to the skin, above the tumor, a dense stratum of ricinated collodion, made according to the following formula: gun cotton, 8 parts; ether, 100; alcohol, 33; castor-oil, 8. Under the influence of the compression exerted by the collodion the author obtained, in the space of a few weeks, so much reduction that one of the tumors disappeared entirely. The second and most voluminous tumor was reduced to about two thirds of its original volume, while the patient, though still under treatment, continued his ordinary occupation; but he died later, instantaneously, by external rupture. Dr. G. Polli states ("Gazz. Med. Ital. Venete," September, [illegible] that he has applied the ricinated collodion with a more permanent recess in a very painful case of aneurism of the arch of the aorta, which had already determined a periosteal inflammation of the corresponding portion of the sternum. After a local application of leeches followed by emollients, several strata of the collodion were applied to the pulsating region over the aneurism, the patient being kept in perfect repose. In a few days the pain ceased, the pulsation lessened, and the patient was enabled to resume his occupation (literature). He has for the five months which have passed since enjoyed good health, takes long walks every day, has a good appetite, and has no other inconvenience than a sensation of a tolerable beating at the base of the neck. G. R. C.

On Foreign Bodies in the Œsophagus and Œsophagotomy. (By Langenbeck, "Berl. kl. Wochensch.," 177, pp. 51, 52; "Gaz. Méd.," 14, 1878).—Foreign bodies accidentally introduced into the œsophagus are arrested by preference at three points: at the commencement of the œsophagus, at the level of the cricoid cartilage, and at the lower end of the œsophagus just above the cardia. Larger bodies usually pass the lower limit of the pharynx; by pressing the epiglottis against the glottis they may cause fatal asphyxia. Cases are not infrequent where artificial teeth are swallowed, which accident has often occurred while the patient was being anæsthetized. Extraction of voluminous bodies from the upper portion of the œsophagus is best performed with the aid of the finger, unless the body be fixed firmly, when forceps may be employed. Tracheotomy requires too much time, during which death by asphyxia is almost certain. When the foreign body is arrested at the cricoid cartilage, it can generally be detected externally on the left side of the neck as a round swelling. In such cases it is difficult to displace the body upward or downward, because the œsophagus is spasmodically contracted; however, no pushing by means of a sound should be resorted to, as serious lesions may result. In two cases Langenbeck kneaded the tumor in the neck until its position was so changed that it could be extracted with the forceps. In another instance, the foreign body was reduced to fragments by the same procedure and fell into the stomach. When the foreign body does not project, œsophageal catheterism is indispensable to ascertain its exact situation. The subjective symptoms of the patient should not be depended upon, as he will designate the cardia as the seat of a foreign body situated at the cricoid cartilage. Langenbeck strongly opposes the practice of many surgeons of attempting to displace the foreign body by means of a catheter armed with a sponge; in this manner the body becomes only more firmly fixed in its situation. Langenbeck employs a whalebone catheter armed with an iron ball and well lubricated with oil; with this, hard foreign bodies can be easily recognized. When the nature of the substance contraindicates its being pushed into the stomach, he employs forceps provided with rings for extraction. When the rings become engaged in the substance of the foreign body or in the walls of the œsophagus, or it cannot be extracted, œsophagotomy must be performed. Of 314 cases of foreign bodies in the œsophagus, 109 terminated fatally. Though these numbers have only relative value, as many cases not published terminated favorably, they nevertheless show how unskillful and tardy manipulations may imperil the patient's life. As to the dangers of œsophagotomy, Koenig's statistics of 28 cases show 23 recoveries and 5 deaths; in three of these cases death was due to gangrene and perforation. The operation relatively is not very dangerous. Langenbeck's method is that of Guattani. The body not projecting externally, a gum-elastic catheter or zinc sound is introduced to furnish a guide for the incision. When the thyroid gland is very much tumefied it must be carefully isolated and detached from the œsophagus.

Dr. Aschenborn (idem) reports the case of a boy, 16 years old, who, two days after having swallowed a piece of hard bread, experienced intense pain in the epigastrium when he swallowed any food. The patient when admitted into hospital had a violent fever (104°–106° F.), quickened pulse and respiration, but no objective signs of heart or lung disease. The movements of the thorax during respiration caused intense pains; there was difficulty in swallowing solid food. Diagnosis: Inflammation of peri-œsophageal cellular tissue. Shortly after admission, the lateral portions of the neck became markedly tumefied. The stools became bloody, and during one of these hæmorrhages he died from collapse, on the seventh day. The autopsy revealed a rent (1 ctm. in length) in the posterior wall of the œsophagus, about three inches above the stomach. At this level the tube was traversed by a needle (5 ctm. in length), the point completely perforating the thoracic aorta. The cellular tissue surrounding the œsophagus and aorta was infiltrated with decomposing blood; the œsophagus, stomach, and intestine were filled with coagula. E. F.

THERAPEUTICS.

Narcotic Action of Iodoform.—Dr. Oberlander reports two cases which confirm the experiments of Binz on the narcotic action of iodoform. A syphilitic woman had taken twenty-four grammes of the drug, in pills of one centigramme, in the space of eighty days. All at once she was seized with weakness, vertigo, and diplopia. After two days she fell into a profound sleep, which was followed, after thirty-six hours, by nervous exaltation, with severe cephalalgia, delirium, and disordered speech. These phenomena were followed by a period of weakness, during which the patient staggered when walking and even when standing; then the cephalalgia, vertigo, and diplopia reappeared. All this lasted for two weeks. In the second case the phenomena appeared much earlier. The syphilitic woman was sixty-nine years of age, and presented symptoms of poisoning seven days after commencing the internal use of iodoform, and after having taken about five grammes. The sleep continued for five days, and was followed by a sensation of debility and vertigo, which continued for several weeks.—"Zeit. f. prakt. Med." and "Giorn. Int. delle Sci. Med.," No. 2, 1879. G. R. C.

Salicylic Acid in Lupus.—In a case of ulcerous lupus of the face, which had lasted five years, and after every remedy had been tried in vain, Dr. Ameglio painted the parts three times a day with salicylic acid six parts to glycerine twenty parts. In a few days the readily bleeding vegetations were withered, the ulcerating surface dried and assumed a good character, and complete cicatrization had occurred in one month. The patient at the same time used the arsenic treatment.—"Gaz. degli Ospedali," and "Memorabilien," No. 3, 1879. G. R. C.

DISEASES OF WOMEN.

Ovarian Cyst in an Infant One Month Old.—Leduc says the child had bilious vomiting during its life. The tumor, the size of a hen's egg, was ovoid, transparent, fluctuating, of a lemon color; it occupied the small pelvis entirely, and extended beyond the upper strait. Its greatest diameter was 45 millimetres, the smallest 33. It concealed the bladder, and was included in the right broad ligament; the Fallopian tube passed in front; the ovary, from which the tumor appeared to have originated, was at its anterior inner side, and appeared to be smaller than the left one.

The fluid contained in the tumor was limpid, lemon-colored, rich in albumen and glandular matter. The porites of the cyst were finely vascularized. —("Prog. Méd.," and "La Med. Contemporanea," No. 3, 1879.)

G. R. C.

PHYSIOLOGY.

Microscopic Examination of the Circulation. — Under the name of *cheilo-angioscopy*, Professor Hueter announces a new method of studying the circulation in the mucous membrane of the inner surface of the human lower lip. Having secured the head after the manner of photographists, and fixed the chin with an analogous arrangement, he adapts a microscope and a system of illumination. The lip is held by small forceps. On examining the lip a magnificent reticulum of the ramifications of the arterial and venous capillaries is seen, as if the vessels had been injected with a red mass. On looking closely at a small superficial vessel, however, and with a good illumination, the blood-globules are seen moving in the form of small points. The white globules are said to appear as small white spots. This new method may serve to clear up many physiological and pathological problems. Professor Hueter has already obtained important results which he promises to publish shortly.—("Centralbl. f. d. med. Wissenschaft," and "Giorn. Internat. delle Scienze Med.," No. 6, 1879.)

G. R. C.

The Globular Richness of Human Blood.—According to some observations of Drs. E. G. Cutler and E. H. Bradford of Boston ("Journal of Physiology," vol. i., No. 6), there is considerable variation in the globular richness of the white and red corpuscles of the blood under normal physiological conditions. Their observations summarized as follows:

1. The globular richness of the blood varies greatly in different parts of the circulatory system. These local variations are dependent upon the functions of the tissues or organs through which the blood passes, and may be supposed in the main to counterbalance each other.
2. The globular richness of the blood is also affected by general causes; such as the amount of fluid abstracted from the blood and by a deprivation of the regular supply of fluid to the economy.
3. The globular richness is subject to daily variations.
4. There is a decrease in the globular richness of the red corpuscles during fasting, and an increase after a meal.
5. There is probably an increase in the globular richness of the white corpuscles during a fast, and a decrease after a meal.
6. There is a variation of the globular richness in different seasons of the year.
7. There is a slight variation in the globular richness from one week to another.

The Action of Potash Salts on the Human Body.—Drs. Ringer and Murrell ("Journal of Physiology," vol. i., No. 1), in studying the action of chloride of potassium on the frog, observed the great similarity between its action and the effect of mechanical arrest of the circulation. In summer months it first weakens both voluntary power, reflex power, and sensation; the loss of sensation and reflex action rapidly goes on till they are exhausted, while considerable voluntary power still remains, so that an animal without sensation and reflex action can still hop vigorously. In winter months, instead of the sensation being early lost, it persists as long, or almost as long, as voluntary motion. Potash salts being powerful arresters of the heart's action, Drs. Ringer and Murrell proceed to show that the paralysis is not due to a simple arresting of the heart's action, but that, the potash salts having an affinity for all nitrogenous tissue, they destroy its functions, and then, as in mechanical arrest of the circulation, the most highly organized structures suffer most and earliest, so that the paralytic symptoms will occur in the same order after mechanical arrest of the circulation and after poisoning by a potash salt. Thus after poisoning by potash the cord and brain suffer first, then the nerves, and lastly the muscles. Potash arrests the action of the heart, owing to its common action on all protoplasm and not from any special action on that organ. By arresting the circulation, it depresses the reflex function of the cord in the summer months, indirectly through arrest of the circulation in the brain.

Miscellany.

Charcot and La Salpetriere.—The Salpêtrière is a sort of poorhouse in which disabled and incurable paupers are sheltered, to the number of six hundred, a large proportion being epileptics, paralytics, lunatics, etc. The institution is nearly two hundred years old.

Professor Charcot, physician to the place, is a handsome man with an olive complexion, piercing black eyes and of a very striking appearance. He possesses, in an eminent degree, the most essential quality of a great physician, abundant common sense. He is eminently practical. He is a wise doubter, and is slow to accept the assertions of the brilliant writers who lead captive so many of the youthful members of the profession. He is a believer in the crucial test of clinical experiment. He does not esteem metallo-therapy of any practical utility, but considers it an interesting physiological study and worthy of further investigation. He showed a very striking case of hysterical catalepsy. The patient was a plump, healthy-looking woman of twenty-five years. She was first directed to hold out her hand, when Professor Charcot proceed to run a long steel pin almost as large as a knitting-needle, and not very sharp, into various portions of her hands, arm, and scalp. It caused her no pain. She was then blindfolded and the procedure repeated. After this Professor Charcot leaned forward, with his face ten or twelve inches from the patient's, and gazed intently into her eyes for a few moments, when her eyes closed, her head drooped, and she was profoundly asleep. He now pressed sharply with his nail upon the facial nerve just in front of the ear, and the mouth drew back on that side. He pressed sharply upon the inner aspect of the arms, and the arms and hands and fingers contracted to their utmost, and with intense rigidity, on themselves, so that it was found impossible to straighten them. Rubbing hard or pressing sharply the outer aspect of the arms speedily removed the tonic spasm. The under surface of the tongue was pushed firmly with the nails, and it curled back on itself hard and firm. Considerable rubbing and pinching were required to remove the spasm, and Professor Charcot said that the tongue was the most difficult organ from which to remove the spasm. In whatever position the patient's limbs or person were fixed, they remained as fixed as wood or metal. The tonic spasms, before spoken of, remained after the eyes were opened, and sometimes after consciousness was restored. The artificial sleep was sometimes dispelled by blowing suddenly and violently in the face. If this failed, pressure in the region of the left ovary, which was quite tender, would rouse her. No fatigue or soreness followed these exercises.—Dr. L. P. Yandell, in "Louisville Medical News."

Harmlessness of Filth.—Attention has been called ("Philadelphia Medical and Surgical Reporter") to the occasional, and possibly frequent, harmlessness of filth. Dr. George Hamilton, in the last volume of the "Transactions of the College of Physicians of Philadelphia," has a paper on the relation of sewer-gas to typhoid fever, and in it he endeavors to disprove the assertion that sewer-gas and decaying organic matter are the most potent and common causes of typhoid fever. The same denials in regard to scarlatina and diphtheria have been often made by other writers. Some very prac-ical experiments to test the danger of foul water have re-ently been made by Dr. Rudolf Emmerich. He selected wo of the dirtiest ditches in Munich—ditches full of organsms, garbage, dirty rags, hairs of men and beasts, particles f fæces, etc. He drank this water alone for a number of lays. At first it gave him a little headache and diarrhœa, but in a couple of days he recovered, and began to thrive on it. He then put two convalescent patients on the same soft diet, and they continued to improve steadily. From these experiments he concludes that the use of foul drinking water produces no injurious effect on the system in health, and that even existing affections of the intestinal canal are not in the least harmed by it.

In this connection we may recall the experiments made some years ago by Dr. Murray, of the Marine Hospital Service. While in charge of some yellow-fever patients he did his best to prove the non-contagiousness of the disease. He slept with the cases, applied their secretions to his person, and even swallowed some of the vomit; but, although he had never had the disease, it was not communicated to him. Such experiments and statements as these are puzzling, but they will not convince the public that foul water is a perfectly harmless drink, that sewer-gas forms a desirable atmosphere, or that yellow-fever cases are not better in quarantine.

The Code in France.—The "Journal de Bordeaux" gives a very feeling account of the misfortunes of an old physician and Knight of the Legion of Honor, who tried a short time ago to carry out the code of medical etiquette in all its beautiful ramifications. He was called up one night to attend an infant, whom he found in a very desperate condition, a prey to a violent attack of convulsions. Before beginning treatment he made some inquiries into the antecedent history, and learned that another physician had been called in and had treated the child the same morning. He then suggested that it would have been preferable to have called in this gentleman at first, as he had watched the progress of the disease, and doubtless was much better acquainted than he in regard to it. Upon this the father of the child, who was an Englishman, threw himself upon his punctilious medical adviser, and commenced to beat him. A struggle began, and the physician, being the weaker, turned to fly. Four or five women who were in the room joined the pursuit, armed with scissors and broomsticks, and the venerable Knight was chased out of doors and into the street. The "Journal de Bordeaux" takes up the cudgels for its colleague with great vigor, and cries for revenge. "It may be possible," it says, "that in England or America a physician may be beaten with impunity; but in France it is not the custom."

New York Academy of Medicine.—A meeting of the New York Academy of Medicine took place on the evening of September 29th, to celebrate the opening of its new library hall. This hall was erected largely through the liberality of Dr. Abram Dubois. It occupies the rear extension of the main building, is twenty-eight feet wide by fifty feet long, and extends to the third story. It is very completely furnished in every way.

At the meeting a number of distinguished guests were present, among them Dr. Gross, of Philadelphia, and Dr. Ackland, of Oxford, England. The dedicatory exercises consisted of various addresses from gentlemen present. The President, Dr. Fordyce Barker, in his opening remarks, gave a glowing account of the growth and prosperity of the Academy. He then unveiled a bust of Mr. Spencer Wells. Dr. Ackland spoke of the remarkable progress America had made since his previous visit twenty years ago; he paid a compliment to the New York Hospital, and also to the National Board of Health, suggesting the establishment of a professorship of comparative national health.

Other brief addresses were made by Drs. Willard Parker, J. S. Billings, and Austin Flint. A set of congratulatory resolutions was moved by Dr. Parker, and adopted with much applause.

Postponing Death.—A remarkable instance, that indicates a new field of usefulness for amyl nitrite, is related by Dr. E. A. De Cailhol in the "St. Louis Clinical Record." He had been for a long time attending a young woman with phthisis, and had prolonged her life for a considerable time. The fatal day came at last, however. He was summoned by the friends, but found the patient lying pale, cold, and cyanotic, with gasping respiration and tracheal râles. He assured those about her that he could do nothing more, and that nothing could delay the fatal termination. He was entreated, however, to spare no effort to prolong her life. Thereupon he administered three drops of nitrite of amyl by inhalation. Very soon the pulse became fuller, color returned to the face, the breathing was easier, and the patient was able to swallow and converse. After a time the depression began to return; amyl was given again with a slightly less marked effect. Its administration was thus continued during the day and into the evening, when death at length came on. It had been postponed for more than twelve hours, much to the gratification of the friends.

The Secretion of Milk.—Professor Rauber has made some investigations in regard to the secretion of milk which, if true, will modify the present views in regard to it. According to Rauber, milk owes its origin to the white corpuscles of the blood, which traverse the walls of the terminal vesicles of the gland in extraordinary numbers, and then undergo disintegration. In their first stage the corpuscles swell up, become filled with fat corpuscles, and form colostrum corpuscles; disintegration then gradually follows, and the milk corpuscles are formed.

It is suggested as a cause of the sudden gregation of white corpuscles to this region, that the birth of the fœtus occludes an important channel through which these corpuscles are accustomed to escape, and the mammary gland, by the sudden development of its function, affords a new channel for them. It is probable that the epithelial cells secrete a ferment which decomposes the white blood corpuscles, turning them into fat and casein. According to this view of lactation, it is a process very much resembling suppuration.

Co-education of the Sexes.—The "Boston Medical and Surgical Journal" has received a letter from Professor Edmund Rose, of Zurich, giving a statement of the condition of affairs as regards the co-education of the sexes in that university. It appears that in 1873 there were eighty-eight female medical students, eighty being Russians and Nihilists. In the present year there have been only nine. During the interval, the female element has been the cause of considerable trouble; the Russian students were withdrawn by governmental order, much to the satisfaction of the Faculty. Their places were supplied for a time by the mistresses of various German noblemen. The local authorities finally put a stop to this, however, and since then the number of female students has been gradually diminishing. The conclusions drawn from these experiences at Zurich are that there is no demand for female physicians in Europe, and that the attempt to educate them in the same school with men is a failure. A warning is given to Harvard not to attempt a similar experiment.

St. Louis College of Physicians and Surgeons.—This new medical school began its first session in October last. The faculty consists of the following gentlemen:

Dr. L. Bauer, Professor of Surgery; Dr. A. S. Barnes, of Midwifery; Dr. R. S. Anderson, of Anatomy; Dr. P. H. Cronin, of Materia Medica and Pharmacy; Dr. Joseph H. Leslie, Minor Surgery and Dermatology; Dr. J. A. Fabricius, Genito-Urinary System; Dr. L. H. Laidley, Gynecology and Histology; J. G. Lodge, Esq., Medical Jurisprudence; Dr. Theodore Fay, Chemistry and Toxicology; Dr. R. A. Vaughan, Diseases of Children; Dr. William B. Hazard, Registrar of the Faculty.

The college complies with all the demands for a higher standard of medical education, requiring a preliminary examination, three years of lectures, and a graded system.

Countries having Immunity from Consumption.—It is claimed by Dr. V. A. Jagielsky, of London ("The Lancet," September 20, 1879), that the Tartar steppes, Iceland, the Shetland, Faroe, and Hebrides Islands are almost entirely exempt from consumption. As these places are all low elevations, the fact tells somewhat against the especial or exclusive value of mountain climates. Dr. Jagielsky is disposed to think that the immunity is largely due to the universal consumption of koumiss in Tartary, and of a similar drink called "Bland" in Iceland, Faroe, and the Shetland Isles. It is the belief of great numbers of medical men (as Drs. Ucke, Chomenkoff, Portirikoff, Maydell, Schnepp, etc.) that, if anything whatever can be found to check consumption, it is koumiss, especially in a warm, dry climate, like that of the Tartar steppes in summer.

A Prospective Epidemic of Cholera.—Health Commissioner Dr. Wolf, of Chicago, thinks that the cholera is coming this way, and will probably be here next year. He has been studying telegraphic dispatches, and finds that the disease is moving westward. The disease will, he thinks, be brought to New York by the shipping, and from that point will sweep the country. The monthly statistics received at his office show a large increase in the rate of mortality the world over. In Chicago the death-rate has gone above that of last season, although the atmospheric and general sanitary condition of the city has been excellent. The experience of Chicago has been duplicated in other cities. It has been in such times of extraordinarily heavy mortality that the cholera epidemic has come. The indications are that next summer will be a very unhealthy one.—"Cincinnati Lancet and Clinic."

A New Observation in Physical Diagnosis.—At the meeting of the Philadelphia County Medical Society in May last, Dr. Edward T. Bruen presented a paper with the above title. He said that in pulmonary complaints he had often been puzzled to tell whether a subcrepitant râle, especially when occurring in the lower part of the chest, was developed in the parenchyma of the lung or between the surfaces of the pleura. He had latterly found a way to detect this. He placed the stethoscope over the point to be examined and caused an assistant, standing on the other side, to pass his arms around the patient's body, locking the fingers and firmly compressing the chest. The râle, if pleuritic, would then disappear; if not it could still be heard. The rationale of this method is apparent.

New Medical Schools.—A new medical school has been established at Little Rock, Arkansas.

The Kentucky School of Medicine at Louisville, having severed its connection with the Louisville Medical College, is now expected to form an alliance with the Hospital Medical

School; a new Faculty is to be created, and the school will be opened next spring.

It is proposed that a new medical school be attached to the Victoria University, Manchester, England.

A new medical school is to be established at Odessa, Russia, in connection with the Neva University.

Birth-rates in America.—There are five cities in America where the births are registered so that the percentage to the population can be deduced. These are New York, Brooklyn, Providence, Washington, and Cincinnati. The returns from these cities make the births about one to every thirty-eight inhabitants. This is less than that of France even, which is one to thirty-seven. In Russia there is a baby to every twenty inhabitants. The birth-rate among native Americans is about half that of the foreign born. It should be remembered, however, that the American birth-rates are those of the cities only, and even they are not complete.

A Curious Case of Necrosis.—In the Surgical Section of the British Medical Association at its recent annual meeting, Dr. Hayes presented a woman who carried two thirds of her calvarium in her hand. Its place over the brain was supplied by an immense cicatrix, without any bone beneath. The woman, in a drunken fit, had fallen into the fire and cooked her head. The scalp and skull sloughed, the wound healed, and subsequently, when on another spree, she fell out of a loft upon her head, but was not particularly hurt.—"Louisville Medical News."

The Hypophosphites in Phthisis.—Dr. J. G. S. Coghill, of the Ventnor Hospital for consumptives, has recently tried the hypophosphites upon one hundred cases of phthisis ("The Lancet," September 6, 1879), with a view to obtaining a more accurate estimate of their value. He finds that these salts improve the appetite, increase the weight of the body, and promote the digestion of fatty food. They are heat-producers, however, and should not be used in the advanced stages. In the early or arrested forms they are often valuable tonics to the nervous and digestive systems.

American Public Health Association.—At the coming annual meeting of the American Public Health Association, which is to be held in Nashville from the 18th to the 21st of this month, the subject of yellow fever will again be thoroughly discussed. There will be several papers read, and these will be followed by an extended oral discussion. For the purpose of giving definite direction to this, the executive committee has adopted a schedule of points to be especially considered. These points carry the discussion into the practical dealings with the disease rather than into questions of its nature and origin.

Viola Tricolor for Eczema.—The properties of this plant were discussed at the last meeting of the American Dermatological Association, Dr. H. G. Piffard presenting the subject in a brief paper. The plant has been used in France for eczema for some time; Dr. Piffard has used it with much success, especially in eczema capitis et faciei. The imported drug should be used; and the watery preparations are better than the alcoholic. The fluid extract is a good preparation, in doses of ʒj for adults and 5 to 10 minims for children.

Still Another Discoverer of Anæsthesia.—Drs. Wells, Morton, and Long are each having their advocates for priority in the discovery of anæsthesia. While the battle is waging, another candidate has presented himself in the person of Dr. Wilhite. This gentleman was a student in the office of Dr. C. W. Long, and is now living in South Carolina. Whoever may succeed in proving priority, the merit of giving the discovery to the profession and public undoubtedly belongs chiefly to Dr. Morton.

Mortality from Diphtheria.—During the four years from 1873 to 1876, inclusive, 6,877 persons died of diphtheria in New York city. In Massachusetts it is second in fatality to consumption. An equally large death-rate has existed in many other cities and states. The disease is almost as bad in England. Dr. Fergus in his address before the British Medical Association at its last meeting mentioned diphtheria disease which sanitary science had hardly as yet begun to control.

Medical Examiners and Coroners' Juries.—The abolition in Massachusetts of coroners and coroners' juries, and the substitution therefor of medical men, with a reference to the courts of the legal functions of the abolished office, has been attended with the best results. The reports of the medical men—"medical examiners," as they are called—promise to be of great value; and the cost of the new system is only one third that of the old.

The Johns Hopkins Medical School and Hospital.—The future influence of this school as a medical educator has been ably set forth by Dr. John Van Bibber in a paper read before the Maryland Medical and Chirurgical Faculty. It criticises somewhat severely the existing medical schools at Baltimore and elsewhere, and contains some reflections on the Baltimore physicians themselves. The paper was published in the newspapers, and has caused some comment by the profession.

Prevention of Pleuro-pneumonia.—It appears that in Paris the method of dealing with pleuro-pneumonia is by inoculation. Some of the serum from a diseased lung is inoculated into the healthy cow's tail. The tail not unfrequently sloughs off, but the cow is said to be proof against pleuro-pneumonia. This treatment has been tried in this country, but is no longer recommended by the best veterinarians. It is dangerous and uncertain.

Longevity in France and England.—According to a Berlin statistical journal, the proportion of population in France aged upward of sixty years is 11·5 per cent., while in Great Britain it is only 8·6 per cent. This proportion, however, according to "The Lancet," is due to the low birth-rate in France and the high birth-rate in England. The mean duration of life is considerably greater in England than in France and most other foreign countries.

Medicine and Surgery in Paris.—Dr. L. P. Yandell writes from Paris to the "Louisville Medical News," that he visited the Children's Hospital there and helped Dr. Sayre apply plaster-jackets to several cases of Pott's disease. Dr. Yandell was much disgusted with the backwardness of the French surgeons, and their lack of appreciation of the plaster-jackets. They are, he says, still employing painful modes of counter-irritation, and rude and ill-fitting iron appliances.

Hog Cholera.—Dr. D. N. Kinsman, Professor of the Practice of Medicine in the Columbus Medical College, has been making an elaborate study of this disease, by which, he states, $20,000,000 are lost annually in the United States. He concludes that the affection is a specific, contagious disease, peculiar to the species, and always accompanied with extensive peritonitis. It is not, as has been claimed, any form of anthrax or typhoid fever.—"Medical and Surgical Reporter."

Delirium Tremens.—This disorder, according to Dr. Näcke, of Dresden, is rare from the use of wine or beer, and most frequent from potato spirits or amyl alcohol. The average age of those who suffer from the affection is from thirty-five to forty years. Albuminuria exists in 82 per cent. of the cases. The mortality is about 24 per cent.; the first attack being, according to him, the most dangerous.

Loss of Time by Sickness.—The average amount of time lost to each laborer in Europe on account of sickness, according to Dr. Edward Jarvis, is from nineteen to twenty days each year. That among students is from two to five days.

According to the Massachusetts Board of Health, during the year 1872, thirteen days' labor was lost by sickness for each productive person in the commonwealth.

American Academy of Medicine.—This Society held its fourth annual meeting in New York, September 16th and 17th. Dr. Louis H. Steiner, the President, delivered a very able address upon the necessity of higher preliminary education for the medical student. He favored the old-fashioned classical college course as the best basis for a medical education.

National Pharmaceutical Association.—This association held its annual meeting at Indianapolis during the second week of September. A number of interesting papers were presented. A patent-medicine man was admitted to membership, a fact that occasioned considerable disturbance and discussion.

The association adjourned to meet next year at Saratoga.

The New Hotel Dieu, Paris.—This hospital, which has recently been built to supply the place of its too pyæmic predecessor, is, writes Dr. Yandell in the "Louisville Medical News," a great failure. It is not imposing or attractive in architecture; it is badly arranged for light and ventilation; it has only six hundred beds in it, and cost between six and nine million dollars.

The Metric System.—The Ohio State Medical Society has by a unanimous vote rejected the metric system. It meets with disfavor at other places in the West. At the last meeting of the British Medical Association, however, a committee was appointed, with the editor of the "British Medical Journal" as chairman, to report upon the means of introducing the system into Great Britain.

Collecting Bills.—Further steps toward making this a more practicable and easy process are being taken among the profession in the West. The physicians of Quincy, Illinois, have adopted a series of resolutions by which they agree to render their bills monthly, and employ a common collector who will keep a delinquent list for the benefit of his patrons.

The Action of Digitalis.—In a paper read by Dr. E. T. Tibbets before the British Medical Association at its last meeting, the generally accepted views of the action of digitalis were emphatically contradicted. Dr. Tibbets asserted that its action was strictly that of a cardiac sedative and general depressant, resembling in many ways tobacco, aconite, and lobelia.

Yale Medical College.—The Medical Department of Yale College has adopted a three years' graded course. It requires also a preliminary examination, and the course in general is modeled after that of Harvard and the University of Pennsylvania.

Doctors as State Governors.—Dr. Luke P. Blackburn, of Louisville, has been elected Governor of Kentucky, largely on account of his services during the yellow-fever epidemic.

Dr. Alonzo Garcelon, the present Governor of Maine, is an old medical practitioner.

The Navy Medical Service.—The total number of sick cases in the navy for the second quarter of 1879 was 1,057. The daily average number of sick was 98. There were four deaths: 1 from enteric fever, 1 from suicide, 2 from drowning.

The International Medical Congress.—The International Congress of medical sciences held its sixteenth session at Amsterdam in the week from September 7th to September 13th.

Anti-Vaccination Society.—A society, the object of which is to discourage the practice of vaccination, has been organized in this city. We hope its career will be brief.

The Disposal of Sewage Matter.—Dr. Andrew Fergus concluded his address on State Medicine, before the British Medical Association, as follows, after a review of the statistics of diseases for many years:

> The first facts that strike us are the increase in the diarrhœal group, the addition of a new zymotic, viz., diphtheria, which does not appear till 1851,* and the small diminution of typhoid in the fever group.
>
> If we bear in mind that these are excremental-pollution diseases, I believe we shall find the reason of this increase in the fact that we have been careless in the disposal of our excreta, and have been drinking water and breathing air contaminated by it in a state of decomposition. †

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* In regard to this, Mr. Simon asks, "Why diphtheria, which scarcely had had a place in history till it overran Europe in the sixteenth century, and which since then had but rarely been spoken of, has for the last ten years been an important disease in England?" (Eighth Report, page 87, year 1865.)

† I wish to quote a single paragraph from Mr. Simon's second report to the Privy Council, page 64, in which he confirms Dr. Greenhow's re-

When I first turned my attention to public health, I had the most perfect faith in water carriage for the removal of the refuse of communities, but investigation, experiment, and experience have obliged me to change my opinion.

My first investigations referred to decayed soil-pipes, and from observation and analysis I was led to conclude that the decay was produced by gas. I shall not enter into detail on this subject, but merely mention one point of practical importance, that pipes open at the top to the external air last longer than those which are closed.

It was many years after my conviction that the pipes were destroyed by gas before I could satisfactorily explain how it got into them. I knew that there is always decomposition going on in most traps, but the quantity of gas generated there did not appear to me sufficient to account for this action on all lead pipes that had been long enough in use. Tension in sewers occasionally overcoming the traps, being only an accident, could not be an important factor in a constant result. After much consideration, I was helped to a solution of my difficulty by Graham's experiments on the diffusion of gases. I argued that if these diffuse so readily through gases, they might probably do the same through water; and thus, after first being absorbed on the sewer side of the trap, they might be discharged on the house side of the same. I experimented on the subject.

Mr. M'Tear, F. C. S., repeated these experiments with larger tubes, with similar results. He found that the gases passed in a peculiar mode through the water; he says: "A curious fact, and yet one quite to be expected, is here shown, viz., that light gases pass through by the top of the bends, and heavy gases at the bottom; also, that the gas does not saturate the water in the trap by any means, but that it first saturates the surface next the vapor, then the gas seems to sink down in a fine stream, and gradually travels through the liquid to the other side, when it again spreads out and begins to diffuse both into the atmosphere above it, and downward through the water in the trap; in fact, the most apt illustration of the general appearance is the gradual dis-

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port, and says: "And in this respect one paragraph from the following paper—a paragraph which expresses the most definite result of Dr. Greenhow's observations in all the diarrhœal districts, and which accords with all the best experience previously obtained in other like investigations, deserves to be well remembered. 'The excess of mortality has in all places been coincident with one or other of two definite local circumstances: (*a*) the tainting of the atmosphere with the products of organic decomposition, especially of human excrement; or (*b*) the habitual drinking of impure water.'"

persion of a so-called smoke ring from the funnel of a locomotive."

Another point I had to consider was the behavior, if we may so term it, of water and excretal matter. If the kidney and bowel secretions are kept separate, decomposition goes on very slowly; if they are mixed, it is more rapid, and if water be added, it is much accelerated. It is a popular opinion that water is a purifier, but in regard to these matters it is a mere shunter. It merely removes the nuisance from my door to deposit it somewhere else; it conveys organic refuse, but does not destroy it; it merely carries the nuisance from the city to make it a source of pollution in the river. Chemical science tells us that water of itself and by itself has no purifying power; if you could shut up pure water and pure filth (if we may use such a term), they would remain the same for all time, the only purifying element in the water being the small modicum of air dissolved in it. In a shallow, brawling stream, this exercises a considerable power, as the water is constantly being re-äerated; but very slight in a deep, sluggish stream, and hence the ready pollution of our rivers by organic refuse. I hope I shall not be misunderstood and considered as in any way defending the abounding abominations of the old privy system, when I say that the change to water-carriage was adopted without sufficient investigation, and with no adequate conception of the results which would follow. The system was hailed as a great boon both to comfort and decency, and it was at that time supposed that if these offensive matters were once out of sight, there was an end of them, and no evil consequences were dreaded.

But another most cogent reason against passing these offensive matters into our rivers or the sea, is the consideration that such a course is directly opposed to the laws of nature, in the economy of which there is no such thing as waste. Earth is the original mother of all organized matter, and her law of rotation seems to be first plants, from which animals draw their support. What is given off from animals should be restored to the earth again. We know that the carbonic acid so freely given off by animals is at once utilized for the growth of plants; but I believe if it had been left to our disposal, the whole world would have been asphyxiated long ago. The other excretions of animals are equally necessary for the growth of the vegetable world. After years of further study and investigation, I can only adhere to my opinion expressed many years ago, that "if it is true that organic poisons producing disease may pass from sewage; if it is true that cholera, diphtheria, typhoid fever, and diarrhœa are traceable to de-ing into our systems by air or water the results of decomposition of human excreta; if it is true that these diseases, and others from the same causes, swell our death-rate and carry off some of the most valuable of our population, then, gentlemen, I affirm that the only true sanitary solution of our difficulties is that all excreta shall either be returned to the earth or subjected to chemical action, rendering decomposition impossible; and I am furthermore sure that if a tithe of the time, skill, and ingenuity, and one thousandth part of the money, that have been devoted to a water-carriage had been spent in investigations in this direction, the problem of the sewage question would have been solved long ago.

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department, United States Army, from September 14 to October 13, 1879.

Sutherland, Charles, Colonel and Surgeon.—To report in person to the commanding general, Military Division of the Pacific, for duty as Medical Director of that Division. S. O. 229, A. G. O., October 4, 1879.

Irwin, B. J. D., Major and Surgeon.—To report in person to the commanding general, Department of Dakota, for assignment to duty. S. O. 229, C. S., A. G. O.

Clements, B. A., Major and Surgeon.—Granted leave of absence for four months. S. O. 228, A. G. O., October 2, 1879.

Webster, W., Major and Surgeon.—Relieved from duty at Fort Warren, Mass., and assigned to duty at Fort Preble, Me., as Post-Surgeon. S. O. 167, Department of the East, September 22, 1879.

Forwood, W. H., Major and Surgeon.—Leave of absence extended two months. S. O. 218, A. G. O., September 20, 1879.

Wolverton, W. D., Major and Surgeon.—To report in person to commanding general, Department of Dakota, for assignment to duty. S. O. 229, C. S., A. G. O.

Brown, H. E., Captain and Assistant Surgeon.—Granted leave of absence for one month, with permission to leave the Department, and apply for one month's extension. S. O. 205, Department of Texas, September 29, 1879.

Brewer, J. W., Captain and Assistant Surgeon.—Granted leave of absence for six months on surgeon's certificate of disability. S. O. 219, A. G. O., September 22, 1879.

Tremaine, W. S., Captain and Assistant Surgeon.—So much of Paragraph 3, S. O. 195, August 25, 1879, from A. G. O., as relates to him, is revoked. S. O. 220, A. G. O., September 23, 1879.

Middleton, P., Captain and Assistant Surgeon.—Relieved from duty in the Department of the East, to take effect October 1, 1879, and to report to the commanding general, Department of Texas, for assignment to duty. S. O. 215, A. G. O., September 17, 1879.

Kimball, J. P., Captain and Assistant Surgeon.—Assigned to duty at Fort Sanders, Wyoming Territory. S. O. 82, Department of the Platte, September 20, 1879.

O'Reilly, R. M., Captain and Assistant Surgeon. Granted leave of absence for one month. S. O. 145, Department of the South, September 26, 1879.

Munn, C. E., Captain and Assistant Surgeon.—To report in person to the commanding general, Department of the Missouri, for assignment to duty. S. O. 232, A. G. O., October 9, 1879.

Adair, G. W., 1st Lieutenant and Assistant Surgeon.—Assigned to duty as Post Surgeon, Fort Mackinac, Mich. S. O. 161, Department of the East, September 13, 1879.

Moseley, E. B., 1st Lieutenant and Assistant Surgeon.—Having reported in person, relieved from duty at Fort Robinson, Neb., and to report in person to the Department Commander at Rawlins, Wyoming Territory. S. O. 89, Department of the Platte, October 6, 1879.

Finley, J. A., 1st Lieutenant and Assistant Surgeon.—Granted leave of absence for four months. S. O. 230, A. G. O., October 6, 1879.

Taylor, B. D., 1st Lieutenant and Assistant Surgeon.—Granted leave of absence for three months, with permission to apply for one month's extension. S. O. 222, A. G. O., September 25, 1879.

Biart, V., 1st Lieutenant and Assistant Surgeon.—Granted leave of absence for one year, on surgeon's certificate of disability, to take effect October 1, 1879, with permission to go beyond sea. S. O. 232, C. S. A. G. O.

Biart, **Victor**, 1st Lieutenant and Assistant Surgeon.—Relieved from duty at the Cantonment on North Fork of the Canadian River, Indian Territory, and to take post at Fort Leavenworth, Kan. S. O. 193, Department of the Missouri, October 4, 1879.

Gray, W. W., 1st Lieutenant and Assistant Surgeon.—When relieved from duty at Fort Colville, Wyoming Territory, to proceed to Vancouver Barracks, and report to the commanding officer for duty. S. O. 123, Department of the Columbia, September 15, 1879.

Appel, A. H., 1st Lieutenant and Assistant Surgeon.—To repair to Fort Benton, M. T., and to report to the post commander for duty as Post Surgeon. S. O. 106, Department of Dakota, September 30, 1879.

Phillips, H. J., Captain and Assistant Surgeon.—Died at New York City on October 10, 1879.

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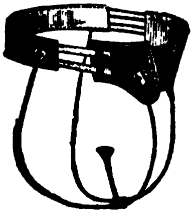

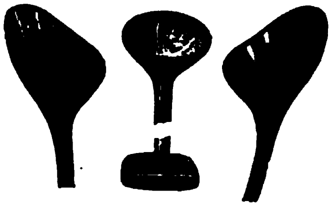

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CLAUDE H. MASTIN, M. D., LL. D., Mobile, Ala.	"I consider LACTOPEPTINE the very best preparation of the kind which I have ever employed, and for patients with feeble digestion I know of nothing which is equal to it."
Prof. H. C. BARTLETT, Ph. D., F. C. S., London, England.	"I find the preparation of LACTOPEPTINE contains within itself all the principles required to promote a healthy digestion."

PRICE LIST.

LACTOPEPTINE (in oz. bottles)	per oz.	$1 00
" (" ")	per doz.	10 00
" (in ½ lb. ")	per lb.	12 00

We also prepare the various Elixirs and Syrups in combination with Lactopeptine.

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HARVARD UNIVERSITY.

MEDICAL DEPARTMENT, BOSTON, MASS.

NINETY-SIXTH ANNUAL ANNOUNCEMENT (1879-'80).

FACULTY OF MEDICINE.

CHARLES W. ELIOT, LL. D., *President.*
CALVIN ELLIS, M. D., *Prof. of Clinical Medicine, Dean.*
OLIVER W. HOLMES, M. D., *Professor of Anatomy.*
HENRY J. BIGELOW, M. D., *Professor of Surgery.*
FRANCIS MINOT, M. D., *Hersey Professor of the Theory and Practice of Medicine.*
JOHN P. REYNOLDS, M. D., *Professor of Obstetrics.*
HENRY W. WILLIAMS, M. D., *Professor of Ophthalmology.*
DAVID W. CHEEVER, M. D., *Professor of Clinical Surgery.*
JAMES C. WHITE, M. D., *Professor of Dermatology.*
ROBERT T. EDES, M. D., *Professor of Materia Medica.*
HENRY P. BOWDITCH, M. D., *Professor of Physiology.*
CHARLES B. PORTER, M. D., *Demonstrator of Anatomy and Instructor in Surgery.*
FREDERICK I. KNIGHT, M. D., *Instructor in Percussion, Auscultation, and Laryngoscopy.*
J. COLLINS WARREN, M. D., *Instructor in Surgery.*
REGINALD H. FITZ, M. D., *Professor of Pathological Anatomy.*
WILLIAM L. RICHARDSON, M. D., *Instructor in Obstetrics.*
THOMAS DWIGHT, M. D., *Instructor in Histology.*
EDWARD S. WOOD, M. D., *Professor of Chemistry.*
HENRY H. A. BEACH, M. D., *Assistant Demonstrator of Anatomy.*
WILLIAM H. BAKER, M. D., *Instructor in Gynæcology.*
WILLIAM B. HILLS, M. D., *Instructor in Chemistry.*

OTHER INSTRUCTORS.

GEORGE H. F. MARKOE, *Instructor in Materia Medica.*
FRANK W. DRAPER, M. D., *Lecturer on Forensic Medicine.*
CHARLES F. FOLSOM, M. D., *Lecturer on Hygiene.*
HENRY P. QUINCY, M. D., *Assistant in Histology.*
EDWARD N. WHITTIER, M. D., *Ass't in Clinical Medicine.*
GEORGE M. GARLAND, M. D., *Assistant in Physiology.*
ELBRIDGE G. CUTLER, M. D., *Assistant in Pathological Anatomy.*

The following gentlemen will give Special Clinical Instruction:

FRANCIS B. GREENOUGH, M. D., and EDWARD WIGGLESWORTH, M. D., *in Syphilis.*
J. ORNE GREEN, M. D., and CLARENCE J. BLAKE, M. D., *in Otology.*
CHARLES P. PUTNAM, M. D., and JOSEPH P. OLIVER, M. D., *in Diseases of Children.*
SAMUEL G. WEBBER, M. D., and JAMES J. PUTNAM, M. D., *in Diseases of the Nervous System.*

Persons who hold no degree in arts or science must pass an *examination for admission* to this School in Latin, in the elements of Physics, and in English. French or German will be accepted instead of Latin. The admission examination will be held June 23d, both at Boston and at Cincinnati; on September 22d at Boston only.

Instruction is given by lectures, recitations, clinical teaching, and practical exercises, distributed throughout the academic year. The year begins September 25th, 1879, and ends on the last Wednesday in June, 1880. It is divided into two equal terms, either of which is more than equivalent to the former "Winter Session" as regards the amount and character of the instruction. The course of instruction has been greatly enlarged, so as to extend over three years, and has been so arranged as to carry the student progressively and systematically from one subject to another in a just and natural order. In the subjects of anatomy, histology, chemistry and pathological anatomy, laboratory work is largely substituted for, or added to, the usual methods of instruction.

Instead of the customary oral examination for the degree of Doctor of Medicine, at the end of the three years' period of study, a series of written examinations on all the main subjects of medical instruction is held at the end of each year; and every candidate for the degree must pass a satisfactory examination in every one of the principal departments of medical instruction during this period of study.

DIVISION OF STUDIES.

For the First Year.—Anatomy, Physiology, and General Chemistry.

For the Second Year.—Medical Chemistry, Materia Medica, Pathological Anatomy, Clinical Medicine, Surgery, and Clinical Surgery.

For the Third Year.—Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery.

Students are divided into three classes, according to their time of study and proficiency. Students who began their professional studies elsewhere may be admitted to advanced standing; but all persons who apply for admission to the second or third year's class must pass an examination in the branches already pursued by the class to which they seek admission. The examinations are held in the following order:

At the end of the first year: Anatomy, Physiology, and General Chemistry.

End of second year: Medical Chemistry, Materia Medica, and Pathological Anatomy.

End of third year: Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery and Clinical Surgery.

Examinations are also held before the opening of the School, beginning September 22d.

Requirements for a Degree.—Every candidate must be twenty-one years of age; must have studied medicine three full years, have spent at least one continuous year at this School, have passed the required examinations, and have presented a thesis.

Course for Graduates.—For the purpose of affording to those already Graduates of Medicine additional facilities for pursuing clinical, laboratory, and other studies, in such subjects as may specially interest them, the Faculty has established a course which comprises the following branches: Histology; Physiology; Medical Chemistry; Pathological Anatomy; Surgery; Auscultation, Percussion, and Laryngoscopy; Ophthalmology; Dermatology; Syphilis; Otology; Electro-therapeutics; Gynæcology; and Obstetrics. On payment of the full fee the privilege of attending any of the other exercises of the Medical School, the use of the laboratories and library, and all other rights accorded by the University, will be granted. Single branches may also be pursued. Graduates of other Medical Schools, who may desire to obtain the degree of M. D. at this University, will be admitted to examination for this degree after a year's study in the Graduates' Course. Examination on entrance not required.

Fees.—For Matriculation, $5; for the year, $200; for one term alone, $120; for Graduation, $30. For Graduates' Course, the fee for one year is $200; for one Term, $120; and for single courses such fees as are specified in the Catalogue. Payment in advance.

Members of any one department of Harvard University have a right to attend lectures and recitations in any other department without paying additional fees.

For further information, or Catalogue, address

Dr. R. H. FITZ, Secretary, 108 Boylston St., Boston, Mass.

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The Albuminoid Ferruginous Principle of Blood.

HÆMOGLOBIN is the only physiological chalybeate. Associated as it is with the phosphates of the blood, it forms the most powerful of tonics, and at the same time a most nourishing food. It is especially useful in cases of *Anæmia*, *Chlorosis*, *Cachexias*, *Exhaustion* caused by excess of work, nervous debility, fatigue resulting from parturition and lactation. It replaces entirely liquid blood, which has been recommended and used with success in *Phthisis* and *wasting away*.

It is offered in two forms: In cachets (wafers), 60 of which are contained in a box; combined with chocolate in small squares, 30 of which are in a box: both forms can be sent by mail.

Prepared by C. CRINON, Paris, Pharmacist of the first class, Laureate of the Hospitals of Paris. Samples may be obtained by application to the agents.

THOMAS'S IODIZED COTTON.

Prepared by J. THOMAS, Pharmacist, Paris.

This preparation is destined to replace all liquid preparations of iodine used for external application. It obviates entirely the irritating action of iodine when applied in concentrated solution, and presents to the physician a means of graduating its effects with greatest ease, from the mildest to the most powerful action, by applying a thin or thick layer of the iodized cotton.

When placed in a glass tube, or a quill, the Iodized Cotton can be used for introducing iodine into the respiratory organs, by inhaling the air passing through the tube or quill.

The Iodized Cotton, in glass jars of two sizes, is sold by druggists generally, and by the agents.

MEYNET'S

DRAGÉES OF COD-LIVER EXTRACT.

Careful experiments have established the fact that the **Extract of Cod-Livers** contains very valuable properties, which render it superior to the ordinary cod-liver oil. It is composed principally of *Gaduine*, large proportions of *Iodides*, *Chlorides*, *Bromides*, *Phosphoric Acid*, *Lime*, *Soda*, and *Ammonia*, and especially *Propylamin*, all of which enter, but in very small proportions, into cod-liver oil.

These dragées of pure cod-liver extract take the place of cod-liver oil, and have been used with eminent success by medical celebrities of Europe in cases of *Scrofula*, *Rheumatic Affections*, *Rachitism*, *Phthisis*, and in all cases where a propylamic medication is indicated.

MEYNET'S DRAGÉES are sold in bottles containing 100 dragées. Dose, two to six a day. Each dragée is equivalent to two tablespoonfuls of cod-liver oil.

MEYNET'S GRAINS are small granules intended for children. Ten are equivalent to one dragée.

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TAR AND IRON SYRUP AND CAPSULES.

Prepared by DUREL, Pharmacist, Paris.

The combination in one preparation of the stimulating and balsamic properties of Tar with the tonic properties of a salt of iron is a desideratum which has at last been attained in this preparation. The indications for such a remedy are many, but it has been found especially useful in CHLOROSIS, BRONCHIAL CATARRH, CATARRH OF THE BLADDER, CHRONIC UTERINE DISCHARGES, depending upon an enfeebled or relaxed state of the system. It is sold by chemists generally, and by the agents.

The above preparations may be obtained from

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LONG ISLAND COLLEGE HOSPITAL,

BROOKLYN, N. Y.

ANNUAL ANNOUNCEMENT—1879-'80.

The Reading and Recitation Term will commence October 1, 1879, and close at the beginning of the Regular Term.

The Regular Term will open February 1, 1880, and continue five months.

FACULTY OF THE COLLEGE.

DANIEL AYRES, M. D., LL. D., Emeritus Professor of Surgical Pathology and Clinical Surgery.

SAMUEL G. ARMOR, M. D., LL. D., Professor of the Principles and Practice of Medicine and Clinical Medicine, and Dean of the Faculty.

GEORGE W. PLYMPTON, A. M., Professor of Chemistry and Toxicology.

CORYDON L. FORD, M. D., Professor of Anatomy.

ALEXANDER J. C. SKENE, M. D., Professor of the Medical and Surgical Diseases of Women, and Diseases of Children.

JARVIS S. WIGHT, M. D., Professor of the Principles and Practice of Surgery and Clinical Surgery and Registrar.

JOSEPH H. RAYMOND, M. D., Professor of Physiology and Microscopic Anatomy.

EDWARD SEAMAN BUNKER, M. D., Professor of Histology and General Pathology.

JOHN D. RUSHMORE, M. D., Professor of Principles and Practice of Obstetrics.

JOHN A. McCORKLE, M. D., Lecturer on Materia Medica and Therapeutics.

The Clinical advantages of the Long Island College Hospital are unsurpassed in this country.

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DEAN OF THE FACULTY.

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10	"	"
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Samples furnish on applicati

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Forbid anything of an oleaginous being sent through the mail.

THEOPHILUS REDWOOD, Ph. D., F. C. S., Professor of Chemistry and Pharmacy Pharmaceutical Society of Great Britain, says, in reference to this preparation:

"UNGUENTUM PETROLEI appears to be obtained from crude Petroleum by fractional distillation and subsequent purification. Products of a similar description have been introduced in pharmacy, and recom as substitutes for animal or vegetable fats in the preparation of ointments or liniments.

"Among these the UNGUENTUM PETROLEI is distinguished by its having a firmer consistence and a melting-point, and in these respects it resembles pure lard, from which it differs in that it is entirely liability to become rancid or to undergo any chemical change. It has an amber color, and a smooth appearance, and is almost wholly free from odor or taste. It is free from, and insoluble in, water. It slightly soluble in rectified spirit, but very soluble in ether, in fixed oils and fats. I am of opinion that acters and properties are such as to render it a valuable adjunct to our Materia Medica."

Dr. TILBURY FOX, London, writes: "I like the UNGUENTUM PETROLEI very much shall not fail to prescribe it."

From "THE LANCET," London, October 20, 1878: "Semi-transparent, pale color, and perfectly free from offensive smell. We consider it a valuable preparation, and hope its use come as common in England as it is said to be in America."

From "THE MEDICAL TIMES AND GAZETTE," London, October 20, 1

"The substance introduced under the name of UNGUENTUM PETROLEI is of about the consistence of has no smell, keeps any length of time, apparently without becoming rancid, and may be exposed to of atmosphere without undergoing chemical change. It has long been, we understand, in use in where it enjoys a wide-spread popularity; and it will, we doubt not, come into extensive use here vehicle for making ointments, as a demulcent in various diseases of the skin, and as a lubricant."

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UNIVERSITY OF VERMONT.

MEDICAL DEPARTMENT,

BURLINGTON, VT.

TWENTY-SEVENTH SESSION, 1880.

FACULTY OF MEDICINE.

MATTHEW HENRY BUCKHAM, A. M., M. D., BURLINGTON, VT.,
President.

SAMUEL WHITE THAYER, M. D., LL. D., BURLINGTON, VT.,
Emeritus Professor of General and Special Anatomy; Consulting Surgeon to Mary Fletcher Hospital.

WALTER CARPENTER, M. D., BURLINGTON, VT.,
Professor of the Theory and Practice of Medicine; Attending Physician to Mary Fletcher Hospital.

JOHN ORDRONAUX, M. D., LL. D., NEW YORK CITY,
Emeritus Professor of Medical Jurisprudence.

A. F. A. KING, M. D., WASHINGTON, D. C.,
Professor of Obstetrics and the Diseases of Women; Consulting Physician to Mary Fletcher Hospital.

WILLIAM DARLING, A. M., M. D., F. R. C. S., LL. D., NEW YORK CITY,
Professor of General and Special Anatomy.

HENRY D. HOLTON, A. M., M. D., BRATTLEBORO, VT.,
Professor of Materia Medica and General Pathology; Consulting Surgeon to Mary Fletcher Hospital.

JAMES L. LITTLE, M. D., NEW YORK CITY,
Professor of the Principles and Practice of Surgery; Consulting Surgeon to Mary Fletcher Hospital.

A. P. GRINNELL, M. D., BURLINGTON, VT.,
Professor of Physiology and Microscopic Anatomy; Attending Physician to Mary Fletcher Hospital.

RUDOLPH A. WITTHAUS, M. D., NEW YORK CITY,
Professor of Chemistry and Toxicology.

PROFESSORS OF SPECIAL SUBJECTS.

WILLIAM A. HAMMOND, M. D., Surgeon-General, U. S. A. (Retired), NEW YORK CITY,
Professor of the Diseases of the Mind and Nervous System.

ROBERT W. TAYLOR, M. D., NEW YORK CITY,
Professor of Diseases of the Skin.

A. T. WOODWARD, M. D., BRANDON, VT.,
Professor of the Surgical Diseases of Women; Consulting Physician to Mary Fletcher Hospital.

D. B. ST. JOHN ROOSA, M. D., NEW YORK CITY,
Professor of the Diseases of the Eye and Ear.

STEPHEN M. ROBERTS, M. D., NEW YORK CITY,
Professor of Diseases of Children.

GEORGE M. GARLAND, M. D., BOSTON, MASS.,
Professor of Thoracic Diseases.

CLINTON WAGNER, M. D., NEW YORK CITY,
Professor of Diseases of Throat.

LEROY M. BINGHAM, M. D., BURLINGTON, VT.,
Demonstrator of Anatomy; Attending Physician to Mary Fletcher Hospital.

HOSPITAL ADVANTAGE.—The Mary Fletcher Hospital, with its commodious amphitheatre, is open for clinical instruction during this session. The Medical and Surgical Clinics of the College will be held in the amphitheatre attached to the Hospital. In addition to these regular clinics of the College, instructions will be given at the bedside by the Professors of the Medical Department of the University.

LECTURES ON SPECIAL SUBJECTS.—These lectures by gentlemen well known as authorities recognized in their particular departments, will be delivered during the regular session.

CLINICS.—Besides these lectures, there will be Clinics held as follows:

SURGICAL CLINIC, by Professor LITTLE, every Saturday, from 9 to 12, during the last half of the Session.

MEDICAL CLINIC, by Professor CARPENTER, on Wednesday morning, during first half of the Term.

CLINIC FOR DISEASES OF NERVOUS SYSTEM, by Professor HAMMOND, during his course.

CLINIC FOR DISEASES OF EYE AND EAR, by Professor ROOSA, during his course of lectures.

CLINICS FOR DISEASES OF SKIN, by Professor TAYLOR, during his course.

CLINIC FOR DISEASES OF CHILDREN, by Professor ROBERTS.

CLINIC FOR THORACIC DISEASES, by Professor GEORGE M. GARLAND, M. D.

CLINIC FOR DISEASES OF THROAT, by Professor CLINTON WAGNER.

THE PRELIMINARY TERM, consisting of a course of Lectures and Recitations in the various branches of Medicine and Surgery, will be given on the first Thursday of November, 1879, and continue until March 1, 1880. FEE, $30.00.

THE REGULAR WINTER SESSION will commence on the first Thursday of March, 1880, and continue sixteen weeks. This course will consist of from five to six lectures daily, in the various departments of Medicine and Surgery.

FEES FOR THE REGULAR SESSION.

Matriculation Fee, payable each Term	$5.00
Fees for the Full Course of Lectures by all the Professors	70.00
Graduation Fee	25.00

Material for dissection will be furnished at cost. The tickets are to be taken out at the beginning of the session.

Students who have already attended two full courses of lectures in other regular schools, are admitted on paying the matriculation fee and $25. Students who have attended two full courses in this College, or who, having attended one full course in some regularly established medical school, and one full course in this College, are admitted to a third course of lectures on paying the matriculation fee only. GRADUATES of this school are admitted without fee. GRADUATES of other regular schools and *Theological Students*, are admitted on general ticket by paying the matriculation fee. Good Board can be obtained at reasonable rates.

For further particulars and circular, apply to the Secretary,

Professor A. P. GRINNELL, M. D., Burlington, Vt.

OFFICE OF

TROMMER EXTRACT OF MALT CO,

FREMONT, OHIO.

FREMONT, OHIO, *April*, 1878.

DEAR SIR:

It is now five years since we first introduced and began the manufacture of Extract of Malt in the United States. It has been our aim to furnish the medical profession in America with a malt-extract equal to the best German make, and (by saving the expenses of importation) much cheaper than the foreign article can be afforded. For the manner in which our efforts have been appreciated by the medical profession we desire to express our warmest thanks.

The difficulties attending the manufacture of Extract of Malt in large quantities can be overcome only by that kind of skill which is acquired by experience. Its constituents must receive no injury by the process and good flavor and keeping quality, adapting it to all climates, must characterize the product. All are familiar with the striking difference between certain celebrated brands of ale and porter—and yet the poorest as well as the best is, or should be, produced from barley-malt and hops. Success greatly depends, of course, upon the employment of none but the best material; but it is by the use of specific and long-tried procedures that results are obtained which are so difficult to rival.

We do ourselves but simple justice in stating that our *entire attention* is, and for many years has been, *exclusively* devoted to the manufacture of Extract of Malt for medicinal purposes, and that we give our undivided personal attention to each step in the delicate process by which Extract of Malt of excellent quality can alone be made.

Under these circumstances, it is unreasonable to suppose that the various manufacturers of fluid extracts, elixirs, pills, etc., who (attracted by the high reputation of our Extract of Malt) have recently, in various sections of the country, undertaken the manufacture of a similar article, should generally succeed in producing it of a quality according with the fulsome praise with which their advertisements are filled. While being perfectly willing to let the reputation of our Extract of Malt rest upon its real merits, we owe it to the medical profession, as well as to ourselves, to give warning against imposition.

It has come to our knowledge that certain articles extensively advertised as "pure" and "genuine extract of malt," are composed chiefly of the substance called GRAPE-SUGAR OR MALTINE, which, as is well known, the product of the action of sulphuric acid upon starch subjected to a

high temperature. This artificial grape-sugar or glucose, which is extensively manufactured from corn-starch, is now being used in immense quantities, instead of ordinary cane-sugar, in the sophistication of confectionery, sugar-house syrup, "strained honey," native wines, and canned fruits, and by some brewers in the manufacture of beer and ale. The cheapness of this artificial product of Indian-corn constitutes the chief inducement for this species of substitution for barley-malt and cane-sugar.

Again, an extract of malted grain is manufactured for the purpose of obtaining *diastase*, which (simple and variously combined) is much used in medicine. The appearance of the extract is but slightly changed by being deprived of this important constituent, although it is unnecessary to add that its value as a medicinal agent is thereby greatly impaired. Nevertheless, this very substance, which is little more than refuse material, in the manufacture of diastase, is now being offered for pure malt-extract.

It is *malt-extract* prepared from Barley Malt combined with the proper proportion of Hops, that has been for many years the standard medicinal nutritive employed by the medical faculty of Europe, and especially of Germany. Its value has been established by experience, and its use in the treatment of almost all forms of disease of nutrition is constantly extending. We shall continue to devote the most scrupulous attention to the maintenance of the reputation of our malt-extract, by the careful selection of material, and by unwearied personal attention to manufacturing details.

Attention is respectfully directed to the accompanying extract from Ziemssen, and also to our circular and testimonials elsewhere printed.

Very respectfully,

TROMMER EXTRACT OF MALT CO.

From Ziemssen's Cyclopædia of the Practice of Medicine, Vol. XVI., page 474:

"The Malt Extract prepared from Trommer's receipt is designed to fulfill much the same purpose as Cod-Liver Oil, carbo-hydrates (malt-sugar, dextrin) taking the place of fatty matter. The simple (much or little hopped) and the chalybeate form of Malt Extract are coming more and more into favor as substitutes for the oil; they are more palatable and more easily digested, and should, therefore, be preferred in the dyspeptic forms of anæmia. During the last few years Malt Extract has almost entirely taken the place of Cod-Liver Oil in the treatment of phthisis and other wasting diseases, at the Basle Hospital, and we have as yet found no reason for returning to the use of the latter remedy. The Extract may be given from one to three times a day, in doses varying from a teaspoonful to a tablespoonful in milk, broth, beer, or wine."

TROMMER'S EXTRACT OF MALT.

THE rapidly-increasing demand for our IMPROVED EXTRACT OF MALT, during the four years that it has been manufactured and offered to the medical profession in America, justifies the belief that in its production here we are meeting a generally-felt want.

Long experience in manufacturing Malt Extract has enabled us to completely overcome the many difficulties attending its manufacture in large quantity; and we positively assure the profession that our Extract of Malt is not only perfectly pure and reliable, but that it will keep for years, in any climate, without fermenting or moulding, and that its flavor actually improves by age. Our Extract is guaranteed to equal, in every respect, the best German make, while, by avoiding the expenses of importation, it is afforded at less than half the price of the foreign article.

The Malt from which it is made is obtained by carefully malting the very best quality of selected Toronto (Canada) Barley. The Extract is prepared by an *improved process*, which prevents injury to its properties or flavor by excess of heat. **It represents the soluble constituents of Malt and Hops**, viz., MALT SUGAR, DEXTRINE, DIASTASE, RESIN and BITTER of HOPS, PHOSPHATES of LIME and MAGNESIA, and ALKALINE SALTS.

Attention is invited to the following analysis of this Extract, as given by S. H. Douglas, Professor of Chemistry, University of Michigan, Ann Arbor.

TROMMER EXTRACT OF MALT CO.: I inclose herewith my analysis of your Extract of Malt:

Malt Sugar, 46.1; Dextrine, Hop-bitter, Extractive Matter, 23.6; Albuminous Matter (Diastase), 2.469; Ash—Phosphates, 1.712; Alkalies, .377; Water, 25.7; Total, 99.958.

In comparing the above analysis with that of the Extract of Malt of the German Pharmacopœia, as given by Hager, that has been so generally received by the profession, I find it substantially agree with that article.

Yours truly, SILAS H. DOUGLAS,
Professor of Analytical and Applied Chemistry

This invaluable preparation is highly recommended by the medical profession as a most effective therapeutic agent for the restoration of delicate and exhausted constitutions. It is very nutritious, being rich in both muscle and fat producing materials.

The very large proportion of *Diastase* renders it most effective in those forms of disease originating in *imperfect digestion of the starchy elements* of food.

A single dose of the Improved Trommer's Extract of Malt contains a larger quantity of the active properties of Malt than a pint of the best ale or porter; and, not having undergone fermentation, is absolutely free from alcohol and carbonic acid.

The dose for adults is from a dessert to a table-spoonful three times daily. It is best taken after meals, pure, or mixed with a glass of milk, or in water, wine, or any kind of spirituous liquor. Each bottle contains 1¼ lb. of the Extract.

Our preparations of Malt are for sale by Druggists generally throughout the United States and Canadas, at the following prices:

		$1
EXTRACT OF MALT, with	*Hops (Plain)*	1
" " " "	*Pyrophosphate of Iron (Ferrated)*	1
" " " "	*Cod-Liver Oil*	1
" " " "	*Cod-Liver Oil and Iodide of Iron*	1
" " " "	*Cod-Liver Oil and Phosphorus*	1
" " " "	*Hypophosphites*	1
" " " "	*Iodides*	1
" " " "	*Alteratives*	1
" " " "	*Citrate of Iron and Quinia*	1
" " " "	*Pepsin*	

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TROMMER EXTRACT OF MALT CO.,

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BUFFALO

Lithia Water,

FOR

Diseases of the Uric Acid Diathesis, especially Gout, Rheumatic Gout, Rheumatism, Stone, or Gravel.

Dr. **Horatio C. Wood**, *Professor of Materia Medica, etc., in the Medical Department of the University of Pennsylvania, in the "Medical Times" of July 20, 1878.*

"The Water of the Buffalo Springs, of Mecklenburg County, Virginia, was brought to our notice by a Baltimore physician, who had been relieved by its use of some very troublesome and alarming symptoms, believed to be due to an inherited gouty diathesis. Trial in one or two cases of inveterate Chronic Gout has afforded much satisfaction to us, free diuresis being provoked and followed by relief of symptoms."

Dr. **Hunter McGuire**, *Professor of Surgery in the Medical College of Virginia; ex-President Association of Medical Officers, Confederate Army and Navy; one of the Vice-Presidents of the International Medical Congress.*

[Extract from letter dated Richmond, Va., February 10, 1876.]

"I have used the Buffalo Lithia Water in cases of old Rheumatic Gout, which had resisted the ordinary remedies, with wonderfully good results. I have myself suffered a great deal lately from this malady. The Lithia Water certainly does me more good than anything else I have used; *of all the mineral waters of the country, I regard this as one of the most valuable.*"

Dr. **Harvey L. Byrd**, *of Baltimore, formerly Professor of Materia Medica and Therapeutics, and of Principles and Practice of Medicine, and late Professor of Obstetrics and of Diseases of Women and Children.*

[Extract from letter dated Baltimore, November 11, 1879.]

"My acquaintance with the therapeutical properties of the Buffalo Lithia Water extends over several years, and to a large number of cases in this city, and also to a season as resident physician at the Springs. As a consequence of this long experience and observation, I feel that in what I am about to say in regard to the properties and action of Spring No. 2 will be verified by all those giving the water a fair trial in the diseases hereinafter named, as well as in analogous or kindred conditions of the organism. I have witnessed the best results from the action of this Water in Chronic Gout, Rheumatic Gout, Rheumatism, Gravel, and Stone of the Bladder, and I do not hesitate to express the opinion that in *all* diseases depending upon or having their origin in the Uric Acid Diathesis, it is unsurpassed, if indeed it is equaled by any water thus far known to the profession."

Dr. **J. S. Wellford**, *Professor of Materia Medica in the Virginia Medical College.*

[Extract from letter dated Richmond, Va., September 3, 1879.]

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Dr. **William B. Towles**, *Demonstrator of Anatomy, University of Virginia.*

[Extract from letter of November 1, 1879.]

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AN AUDACIOUS ATTEMPT AT DECEPTION

Has been practiced on the Medical Profession by the writers of an advertisement "About the Bitter Waters of Friedrichshall" which has recently appeared. To the advertisement has been appended a FALSE TRANSLATION of a certificate given by Professor VIRCHOW to the Proprietors of the Friedrichshall Spring, by which it would appear that Professor VIRCHOW stated that the Friedrichshall Water was "under all circumstances the most preferable and absolutely the best;" whereas the proper translation of the original, which has thus impudently been falsified, is: "I quite willingly affirm that it was far from me to recommend any other similar water as that which is to be preferred under all circumstances, and as absolutely the best." The water referred to by Professor Virchow is the Hunyadi János Bitter Water, in favor of which he has given a strong expression of approval. It is further pretended that to this fabricated statement the concurrence is given of other eminent Medical men. The Sole Exporters of the Hunyadi János Bitter Water deem it necessary to expose this attempt to mislead medical opinion by the falsification of important documents.

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MEDICAL JOURNAL:

A MONTHLY RECORD OF

MEDICINE AND THE COLLATERAL SCIENCES.

VOL. XXX.] DECEMBER, 1879. [No. 6.

Original Communications.

ART. I.—*Diseases of the Liver.* From the forthcoming "Treatise on the Practice of Medicine," of Professor ROBERTS BARTHOLOW, M. D.

CONGESTION OF THE LIVER.

Definition: By congestion of the liver is meant an increase in the amount of blood in the organ. Owing to the mechanical arrangement of its vessels, the circulation in the liver is influenced by the condition of the heart and lungs, by the state of digestion, and by the action of the diaphragm and abdominal muscles. It is therefore peculiarly liable to suffer from changes in its blood supply. It may be active (malaria, excesses in eating) or passive (mechanical stasis from obstruction at the heart or lungs).

Causes: The increased fullness of the portal vein and hepatic artery during the process of digestion is a physiological state, which becomes pathological when excesses in eatng and drinking are habitually committed. The admission of irritating substances to the blood, as alcohol, highly stimulating condiments, the salts of lead, phosphorus, etc., inreases the tendency to congestion. In malarious regions, ongestion of the liver is produced and maintained by the absorption of malaria, especially when in sufficient quantity to cause febrile attacks. Without the objective evidence of malarial infection afforded by fever, the spleen may greatly enlarge (ague cake), and the liver be kept abnormally full of blood.

Obstruction and regurgitation of the mitral orifice and of the right cavities induce abnormal fullness of the venous system and ischæmia of the arteries. After the lungs, the liver is the first organ to suffer the passive congestion thus caused. The same result is produced when an obstructive disease of the lungs maintains congestion on the venous, and ischæmia on the arterial sides of the systemic circulation.

A state of the nervous system may affect the circulation in the liver to a great extent: injury of the semilunar ganglion causes immense congestion (Frerichs). Section of splanchnic nerves and the action of curare and some other poisons have the same effect. A fit of anger has brought on an attack of jaundice. Indeed, the facts prove that the nervous system, probably through the vaso-motor nerves, exercises an immediate influence over the circulation of the liver, the mechanism consisting in an increased or diminished blood supply, by paresis or spasm—by the action of the dilator or constricting fibres of this system.

Congestion may also occur in consequence of sudden arrest of an habitual discharge, and has followed a successful operation for hemorrhoids.*

Pathological Anatomy: When the congestion is the result of mechanical obstruction at the heart or lungs, the changes which are entitled "the nutmeg liver" are seen on section the organ. At the center of each lobule the dilated radicle the hepatic vein, enlarged and congested, may be discerne while the neighboring parts of the lobule are pale, and the ra cles of the portal are by comparison less full of blood, really contain less because of the increased pressure from tation of the central vein. On section, a greater quantity venous blood flows out than is normal, and the whole or is darker and larger. The hepatic cells are either normal present in places some cloudiness from albuminous infiltration, commencing fatty degeneration, and some brown-pigment deposition (Förster). The compression exercised upon the hepatic ducts interferes with the discharge of bile; and staining of the lobules about the central vein is a result, causing that appearance known as "hepatic icterus." The consistence of the liver is augmented by the congestion, if it continue for a lengthened period. The bile is not changed in its composition (Frerichs). A catarrhal state of the ducts is set up as a consequence of the congestion, and in due course hyperæmia of the portal radicles of the gastro-intestinal canal takes place, and a catarrh of the mucous membrane results.

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* Murchison, "Diseases of the Liver," 1877, p. 184.

Long-continued hyperæmia of the liver establishes a slow atrophic degeneration of the organ, consisting in wasting and disappearance of those cells lying in contact with the dilated central vein, their places being supplied by connective tissue having a granular appearance. The disappearance of these cells and the contraction of the newly-formed connective tissue cause a diminution in the size of the liver, and an increase of its density, so that this state is often confounded with cirrhosis; but the substance of the organ has not the density, nor are there present the prominences which give the nodular aspect to the latter.

Symptmos: Acute congestion of the liver usually begins with a general *malaise;* aching in the limbs and back; some slight rise of temperature toward evening; headache; a coated, yellowish tongue; loss of appetite, even repugnance to eating; nausea. More or less uneasiness, usually a feeling of weight and of tension, and tenderness, are experienced over the hypochondrium; lying on the left side causes a very unpleasant sensation of weight and dragging; buttoning of the clothing can not be borne; and the easiest position is recumbent, with the decubitus toward the right lateral plane, so that the congested organ can be well supported against the ribs. On the other hand, many patients seek a different position and can not bear any pressure against the hypochondrium. On percussion, the area of hepatic dullness is enlarged in all directions. In the normal state the upper border of the liver is parallel with the lower border of the sixth rib on the mammillary line

—in ordinary quiet breathing; on full expiration the liver rises on a line parallel to the fifth rib, and on full inspiration it falls to the seventh. The lower border of the liver in health corresponds to the inferior margin of the ribs, or extends a finger's breadth below. If the liver is enlarged by hyperæmia, the hepatic dullness will extend across the epigastrium to the left hypochondrium. It is highly important to note that the area of dullness does not represent the actual size of the organ, for the thin margins do not return a dull sound on percussion. Especially will misconception occur on this point, when the ascending colon is distended with gas. Again the area of hepatic dullness may be greatly enlarged downward by alterations in the form and shape of the liver, when congenital, produced by tight lacing, etc., or displaced downward by effusion in the thorax, tumors, etc.

Although percussion affords the most certain physical evidence of enlargement of the liver, inspection may be of some assistance in making a diagnosis, as by the eye an enlargement of the hepatic space may be discerned. By palpation, the liver may be felt projecting below the ribs, and its smoothness or nodulation, its density and resistance, may be readily determined. By mensuration, the diameter of the two sides may be compared, when it will be found, if the congestion is considerable, and the atrophic change has not occurred, that the right is enlarged.

A very characteristic symptom in these cases is a light grade of jaundice. If there be no recognizable tinting of the skin, the sclerotic will be distinctly yellow, and the complexion will have the so-called "muddy" aspect. The integument in the cardiac liver is somewhat earthy, faintly yellow, or fawn color, as in various cachexiæ. In the acute congestion due to temperature changes, to malarial infection, to excesses in eating and drinking, etc., there are usually some gastro-duodenal catarrh and catarrh of the bile-ducts, and consequently an obstacle to the outflow of bile, with more or less intense icterus. The urine in every case contains some pigment, and varies in tint from pale sherry to a port wine color, and casts an abundant deposit of urates with much pigment matter.

In the more severe cases there is considerable gastric disturbance, and vomiting of bile, and large, so-called bilious discharges take place by the bowels. The stools, after the ordinary fecal evacuations, consist of a greenish-yellow or brownish matter, semi-fluid or thinner greenish or yellowish liquid having the appearance and consistence of stored-up bile. Sometimes a large quantity of such material is discharged, giving great relief, the pain, soreness, and heaviness in the side and the headache and feverishness disappearing. Such acute cases are due to climatic, malarial, or dietetic causes.

In the cases of congestion due to cardiac diseases or pulmonary obstruction, the symptoms of hepatic congestion come on slowly; there occur a gradual tension and weight in the right hypochondrium, a slow increase in the size of the liver, an enlargement of the area of hepatic dullness, and a very slight, usually, appearance of icterus, combined with more or less cyanosis, producing a violet-yellow or greenish coloration. Usually, in protracted examples of this form of congestion, there exists extensive gastro-intestinal catarrh, with disturbed digestion, nausea, vomiting, diarrhœa, etc.

In those cases of congestion of the liver due to psychical impressions, jaundice is the main symptom; there exists really a congestion in biliary production, with more or less hyperæmia, but there is no marked enlargement, tenderness, or heaviness in the hepatic area, and the patients experience the sensations belonging to an intense icterus, consisting of itching of the surface, depressed spirits, slow action of the heart, muddy urine, and a general yellowness or jaundice.

Course, Duration, and Termination: The subsequent behavior of cases of hepatic congestion offers wider differences than exist in the clinical history. The cases of congestion due to obstructive diseases of the heart or lungs develop slowly and continue indefinitely, and their course and duration are those of the cardiac or pulmonary disease. In these cases important alterations occur in the liver ultimately; it undergoes atrophy, obstruction to the portal circulation is added to the stasis in the general venous system, and ascites slowly forms.

In the acute cases due to climatic and hygienic causes, the course is short, but the symptoms violent. The whole duration of such an attack will not be more than a week or ten days, and the termination is in health. The same causes which produce the attack will operate in the future, and other attacks will succeed, and ultimately, in some cases, chronic disease of the liver will be established; but, if the causes cease, the effects will also.

In the nervous cases, the jaundice reaches its maximum in a few hours, and then begins to decline, and usually lasts four or five days, terminating in recovery.

Diagnosis: The acute form of congestion may be confounded with jaundice from catarrh of the bile ducts, the symptoms being much the same; but the duration of the cases differs, and the latter is preceded by symptoms of gastro-duodenal catarrh, while in the former these symptoms succeed to the disturbance in the hepatic functions. The congestion due to obstructive pulmonary or cardiac disease is diagnosticated by its clinical history, and the association of the two groups of lesions. The contraction of the liver which succeeds to enlargement in the cases of nutmeg-liver may be confounded with cirrhosis; but, as these states have been confounded by pathologists, the differentiation is not important from the clinical standpoint.

Treatment: The treatment of the cases due to pulmonary or cardiac obstruction is a question of the management of the lesions, cardiac or pulmonary, as the case may be. Not unfrequently, before the heart and lungs are incommoded in mitral disease, the hepatic functions are so disturbed as to demand attention. The timely prescription of digitalis may afford relief, not given by the remedies for disorder of the liver. As the condition is one of abnormal fullness of the venous system of the liver, relief is afforded in those of full habit by leeches around the anus. Unfortunately the need for digitalis, to diminish the leak at the mitral and for leeches to unload the distended veins, continues. Free watery evacuations, procured by salines, are highly useful; but, in the progress of this disease, the congestion of the mucous membrane [illegible] catarrh and diarrhœa, so that the limit of utility by [illegible] ives is soon reached.

In the acute congestion due to climatic or malarial causes, no remedy is so efficient as a full dose of quinia (15 grs.–℈j) with morphia (gr. ¼–½). Small doses frequently repeated may, if preferred, be employed, but the large dose is more efficient. A mild, saline laxative, to keep the bowels soluble (the Saratoga waters may be used), is necessary, and elimination by the kidneys should be maintained by the use of lemonade and diluents. Fomentations, turpentine stupes, etc., applied to the hepatic region are serviceable. When the attacks are due to errors of diet, spirituous liquors, and similar abuses, there must be a change in the habits of the individual. Abstinence, the use of a laxative, and quiet, will effect a cure, provided the excesses have been recent, and alterations of structure have not occurred in the liver.

INTERSTITIAL HEPATITIS—SCLEROSIS OF THE LIVER—CIRRHOSIS.

Definition: By the term *interstitial hepatitis* is meant an inflammation of the intervening connective tissue. An induration of the organ is the result of this process, and hence it is entitled *sclerosis*, just as this term is used for corresponding states of other organs—as sclerosis of the kidney, sclerosis of the lungs, etc. Cirrhosis is the French term derived from the Greek word *kirros*, red, so named on account of the color of the liver. As a very inappropriate designation, it should cease to be used.

Causes: This is a disease of adult life, and rarely occurs before the period of puberty, chiefly because the conditions are wanting at this time. Griffith reports a case in a child of ten, Cayley, in another child of six, and Murchison, in a boy of ten. Nothing definite as regards as the cause was known in the first two, notwithstanding a searching investigation; in the other, the abuse of spirits medicinally and otherwise was ascertained.* Murchison has never met with an example of hob-nailed liver in which excess in the use of spirits had not been made out. There can be no doubt that the male sex is more frequently attacked than the female, not because there exists any inaptitude in the latter, but because of the difference in habits. The great factor is the free use of alcoholic liquors. The amount which constitutes excess differs in different individuals; in some subjects a small amount of alcohol, daily, suffices to set up the interstitial inflammation, when another person would not be affected by it in any way. It is highly probable that hereditary syphilis is a cause, but there are obvious difficulties in the way of a correct determination of this point. The form of atrophy which succeeds to the chronic stasis of the liver in obstructive cardiac disease is often confounded with sclerosis proper, but the change begins by an atrophy of the hepatic cells next the intra-lobular vein in the former; whereas, in the latter, the atrophy begins in the peripheral cells.

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* "Transactions of the Pathological Society," vol. xxvii., 1876, pp. 186, 194, and 199.

Sclerosis has been observed to follow impaction by gall-stones and the paludal cachexia.

Pathological Anatomy: In the first stage, the organ is somewhat increased in size and hyperæmic; its parenchyma is somewhat denser, by reason of the presence of a viscid, reddish-gray material, which consists of fine connective-tissue elements, containing spindle-shaped cells (Förster*). The development of this material imparts to the parenchyma a granular aspect. The color of the organ is at this period a brownish-red, whence the name cirrhosis, or it may be greenish by staining of the bile-pigment; or the deposition of fat may give it a pallid appearance. Thus far, there is an actual addition of material to the organ, and it is somewhat increased in size. The next step consists in the contraction of the new connective tissue and induration.

The substance of the liver is distinctly harder, and, on section, the knife is resisted as if passing through fibrous tissue. The surface of the organ is unequal, nodulated, and traversed by distinct, thickened bands of connective tissue (whence the English term, "hobnailed.") The line of section presents a granular appearance, due to the contracting of the intervening connective-tissue elements, and the consequent forced elevation of the softer material of the lobules.

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* *Op. cit.*, p. 264.

The peritonæum is opaque, thickened by organized exudation, the results of local peritonitis, and adhesions are formed to the diaphragm, between the liver and gall-bladder, etc.

The appearance of the hepatic tissue is due to a hyperplasia of the connective tissue (Glisson's capsule) surrounding and compressing the groups of cells. The cells themselves, where the growth of connective tissue is sufficient to compress them, undergo a change partly fatty, partly pigmented, and in some places, amyloid. The abnormal pigmentation is due to compression of the terminal ducts and stasis of the bile. The vessels of the liver are variously damaged. In those parts where the greatest destruction of cells has occurred, the radicles of the portal vein are obstructed, and the radicles of the subhepatic are also closed by compression and lose their connection with the capillaries of the portal. The hepatic artery becomes dilated, and supplies the newly-formed vessels of the recently developed connective tissue.*

The important alterations occurring in the liver lead to secondary disorders of a serious kind. The interruption to the circulation by closure and obliteration of many of the hepatic capillaries—portal and hepatic—necessarily causes stasis in the whole range of the portal system, including the chylopoietic viscera. The formation of bile is impaired, diminished, and at many points entirely suppressed. The glycogenic and urea-forming functions are disordered to the same extent; consequently the depuration of the blood and the function of digestion, in so far as the presence of bile is necessary to the latter, are hindered or prevented.

Symptoms: The initial symptoms are those of congestion —some heaviness, and dragging in the right side, and increase in volume, the liver projecting a finger's breadth below the ribs. There will be present, usually, some pain and tenderness to pressure, and now and then acute pain with a febrile movement indicative of local peritonitis. A slight icterode hue of the skin may also appear, and rarely jaundice.

Again, in other cases, before symptoms referable to the liver manifest themselves, gastro-intestinal disorders—gastro-intestinal catarrh—occur. The appetite is poor, and food occasions distress; there is acidity, and acid matters are regurgitated; often in the morning there are much nausea and great straining, some acid, glairy mucus and bilious matter coming up after much effort. The bowels are sometimes relaxed, sometimes constipated, and now and then blackish, tar-like semi-solid discharges occur. As intestinal hyperæmia is always present, and sero-mucus constantly poured out, diarrhœa soon comes to be the usual condition. A troublesome meteorism is a constant symptom, and this is due to decomposition of certain foods, and a paretic state of the bowels.

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* Cornil, "Note sur l'état anatomique des canaux biliaires et des vaisseaux sanguins dans la cirrhose du foie." "Bull de l'Acad. de Méd.," "Gaz. Méd. de Paris," 1873.

There are also cases, but rarely, in which the development of sclerosis takes place silently, and the first symptom to awaken attention is ascites.

As respects size, the liver usually enlarges at first, but contraction soon comes on, and a considerable reduction takes place, the area of hepatic dullness being correspondingly reduced. There are cases, however, in which the sclerosis takes place, while the organ continues enlarged—a condition known as hypertrophic sclerosis.

As the splenic forms a part of the portal system of veins, a constant stasis is maintained in the circulation of the spleen, and hence this organ remains swollen; but there are variations in its size, due to the formation of a collateral circulation, and, occasionally, to the development of a sclerosis in the organ.

A constant stasis is also maintained in the intestinal mucous membrane, with the results already mentioned. An attempt at compensation for the obstruction in the venous system of the abdomen is made by enlargement of certain communicating veins, which in health are but slightly auxiliary to the regular route of communication. On the surface of the abdomen, from the xiphoid appendix to the pubis, veins appear, which were previously invisible; they are the communicating veinules between the epigastric and internal mammary, forming an irregular, feather-shaped figure; interlacing vessels also form along the rectus muscle, laterally; communication is established between the parietal veins and the accessory vena porta of Sappey, and those branches of this accessory portal, communicating with the epigastric and internal mammary veins, form a cushion, bluish in color, of distended vessels around the umbilicus (caput Medusæ): communication, also, takes place between the inferior mesenteric and the hypogastric veins, through the hæmorrhoidal, and between the anastomoses of the portal with the œsophageal and diaphragmatic veins.

Hæmorrhages result from the stasis—hæmatemesis or vomiting of blood, and intestinal hæmorrhage; the vessels yield under the increased pressure; or thromboses form in the stomach veins, solution of the affected mucous membrane occurs, and an ulcer is the result. The author has seen two cases of cirrhosis in which frequently recurring hæmatemesis caused death, the hæmorrhage coming from small ulcers in the vicinity of the pylorus. The black, tar-like stools which are passed now and then in contracted liver consist of blood altered by the intestinal juices. The same obstruction of the portal circulation leads to the formation of hæmorrhoids, which often bleed freely and thus afford relief.

Besides the interference with the digestive function due to the gastro-intestinal catarrh, the solution and absorption of certain kinds of food are prevented by the absence of the bile. These are especially the fatty and saccharine matters, and bile has the peculiar property of aiding the absorption of fats. Further, it plays the part of an antiseptic agent, and prevents the decomposition of food in the small intestine: when bile is absent the fæces are not only wanting in the proper color, but they have a peculiarly fetid odor—the odor of decomposition, and the gas passed has the same foul smell. A gradual emaciation is the necessary result of this morbid condition of the intestinal digestion. The integument of the face, neck and forearms, acquires a peculiar, earthy, icteroid hue, but a real jaundice is not common in cases of sclerosis. Sometimes with the first congestion, which initiates the morbid process, jaundice is a symptom, but it soon disappears and the earthy, fawn color, so characteristic in these cases, gradually develops. In those cases of sclerosis succeeding to impaction by gall-stones, jaundice has been a prominent symptom. When the cells have atrophied, and the canaliculi are obliterated, resorption of bile is no longer possible.

The very considerable interference with the process of digestion produced by sclerosis, and the retention in the blood of those effete materials which it is the function of the liver to remove, induce an unhealthy condition of that fluid, and hence venous stigmata appear on the face and nose, and bleeding occurs from the nose, lungs, peritonæum (peritonitis hæmorrhagica) and elsewhere.*

The urine is small in quantity, high colored, brownish, deficient in urea, but loaded with urates which are deposited in great abundance along with much coloring matter.

Œdema of the feet and ankles succeeds to ascites, and the genitalia become much swollen. But the clinical history and treatment of ascites have been sufficiently discussed.

Course, Duration and Termination: The course of interstitial hepatitis is essentially chronic. The first stage, or period of congestion and enlargement, often escapes notice, and only the stage of contraction, with its accompanying accidents, comes under observation. The duration is not fixed, and the termination is governed by the extent of the contraction and the consequent interference with function, but especially by the existence or appearance of such complications as mitral disease, emphysema of the lungs, and chronic interstitial nephritis. Fibroid change, such as occurs in sclerosis of the liver, may manifest itself simultaneously in other organs, as fibroid lung, fibroid heart, fibroid kidney. Obviously, the course and duration of the hepatic disease will be much influenced by the coexistence of this form of degeneration in other organs.

Toward the end of some cases, brain symptoms arise which were at one time supposed to have the same relation to retention of effete products removed by the liver in the normal condition, as the cerebral symptoms in albuminuria had to the failure of kidney excretion. By Flint this toxic material is supposed to be cholesterine, and hence the term cholesteræmia which he applies to these cerebral symptoms. This condition of the brain takes the form of stupor, and low, muttering delirium, passing into deep coma. In a few cases sopor and gradually deepening stupor come on early. These mental symptoms, are, however, mixed up with the perturbation due to alcoholic excess, so that it is impossible to assign to each factor its proper influence in the development of this state.

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* *Thèse de Paris*, 1874. AZMI AHMED—"Des hémorrhagies dans la cirrhose."

A large proportion of cases end before these mental symptoms are reached, cut off by intercurrent maladies, such as pleuritis, pericarditis, pneumonia, etc., or die exhausted by hæmorrhage. Some cases proceed to a typical ending by gradual failure, worn out by the difficult breathing from excessive accumulation of fluid, the constant upright position, the ulcerated legs, the bleeding hæmorrhoids, repeated tapping, stupor, delirium and gradually deepening coma.

Diagnosis: When all the usual symptoms of sclerosis are present, and the subject of them has been given to alcoholic intoxication, there can be no difficulty in coming to a diagnosis by exclusion. Furthermore, sclerosis is greatly more frequent than any of the diseases with which it may be confounded. The difficulties of differentiation occur with pylephlebitis, fatty liver, hydatid cysts, cancer or tuberculosis of the peritonæum.

In pylephlebitis or inflammation with thrombosis of the portal vein, there may be present the same symptoms as in sclerosis, but they arise suddenly, and are not preceded by the symptoms of congestion and a history of alcoholic abuse. Fatty liver is one of the complications of pththisis, and also occurs in the obese, or in those having the tendency to obesity and who eat and drink freely and lead sedentary lives. Although the symptoms referable to the liver are similar to those which are present in sclerosis, there are important points of difference. In fatty liver emaciation is wanting; the organ is enlarged and smooth, instead of being contracted and nodulated. In hydatid cyst, there is a slow, gradual, and painless enlargement, with but little interference in the function of the liver, and without the secondary gastro-intestinal disorders. On palpation a large soft, elastic growth can be made out, and having that peculiar symptom the "purring tremor." These symptoms are all wanting in sclerosis.

Cancer differs from sclerosis in that the pain is greater, the wasting more rapid, the liver presents large protuberances, and secondary deposits in the mesentery can be felt in advanced cases. Cancer and tubercle of the peritonæum are accompanied by symptoms much like sclerosis. They may be differentiated by attention to the following points: In sclerosis, there is enlarged spleen; the urine is deficient in urea but contains leucin and tyrosin, and casts an abundant deposit of urates and coloring matter; in cancer or tubercle, the spleen is not enlarged; the urine contains its proper proportion of urea, and is pale and watery. In cancer or tubercle of the peritonæum, there is great tenderness of the abdomen; the ascites develops quickly; .the strength and flesh rapidly decline, and there are cancer or tubercle deposits in other organs usually.

Prognosis: The course of sclerosis is usually continuously downward, and hence the prognosis is unfavorable. The author believes that the opinions as to its incurability, based on experience, must be somewhat modified now, in view of the results of modern treatment.

Treatment: At the outset the author must condemn the use of mercurials given with a view to correct the hepatic secretions. The secretory function is disturbed, because the liver-cells have atrophied and the ducts are closed. When this result is reached, no treatment can modify the case, for remedies can not restore lost parts. Before important changes have occurred, although new connective tissue has formed and some contraction has taken place, the author believes that much may be done to arrest the morbid process. There is a group of remedies which have a selective action on the liver, the metals chiefly: gold, silver, copper, arsenic, mercury, and phosphorus, which have the property of improving the nutrition of the liver if used in a small quantity for a long period. The most efficient of these are the chloride of gold and sodium, the corrosive chloride of mercury, Fowler's solution, and phosphorus in the form of phosphites or phosphates. When there is much irritability of the gastro-intestinal mucous membrane, two drops of Fowler's solution, with two to five drops of opium tincture, three times a day, will be most easily borne. If there is less irritability, the chloride of gold and sodium ($\frac{1}{30}$ gr.), or corrosive chloride of mercury ($\frac{1}{60}$ gr.), *ter in die*, can be administered. No good result should be expected unless the remedies are kept up for several months. The author has seen surprising results by the long-continued use of sodium phosphate in these cases—given in ℈j–ʒj doses three times a day. The good effects of both remedies may be obtained by joint administration—the phosphate in solution, the chloride in pill form. When it is considered desirable to give phosphates and arsenic together, phosphate of soda and arseniate of soda may be combined. If there is a suspicion of syphilitic taint, the iodides of potassium and ammonium and the bichloride of mercury are the appropriate medicaments.

The mineral acids which at one time were supposed to be efficacious in the treatment of this hepatic disorder are now rarely employed, except to facilitate digestion. The nitromuriatic bath is a serviceable topical application, especially the general bath, to improve the condition of the skin, which is dry, harsh, and scurfy.

Attention to the diet is of the first consequence. Fats and saccharine foods, not undergoing solution and absorption, decompose and add to the existing mischief. The continued use of skimmed milk freely is a dietetic measure of the highest importance. Those components of a diet convertible into peptones should be directed, and the most easily-digested substances only.

When ascites forms, it must be treated according to the principles already set forth under that head; the activity of the kidneys must be maintained, and puncture practiced according to necessity.

LOCAL PARENCHYMATOUS HEPATITIS—SUPPURATIVE HEPATITIS—ABSCESS OF THE LIVER.

Definition: The hepatitis which terminates in suppuration is localized to a special part, and the rest of the organ, outside the area of suppuration, continues comparatively normal. It is a parenchymatous inflammation in that the proper structure of the organ—the gland-cells—is the seat of the inflammatory process. It is a suppurative hepatitis, in that the tendency is to the formation of matter, and the resulting abscess is the special feature demanding attention. Murchison makes an appreciative distinction between pyæmic and tropical abscesses—the former, a result of blood-poisoning; the latter, caused by inflammation of the liver. It is the latter form which is intended by the term suppurative hepatitis, but the *post-mortem* changes and the clinical history, so far as the liver itself is concerned, are the same in the two forms.

Causes: External injury but rarely excites suppurative inflammation, and a blow on the right hypochondrium will more frequently cause an inflammation of the hepatic peritonæum than of the hepatic substance. Blows are more apt to cause abscess of the liver in warm than in cold countries. Climate is one of the principal factors.* A warm climate, an alluvial soil, and miasmatic influences, are more influential in combination than climate alone. Abscess of the liver is very common in the great interior valley of North America—along the Mississippi and its tributaries, within the malarial area—as it is in India, and because of the same etiologic and climatic conditions. Without producing the objective phenomena of fever, malaria disturbs the hepatic functions, but the disturbance is still more decided when the poison is intense enough to cause fever.

Dysentery and ulceration of the intestines have so frequently coincided in appearance with, or have preceded, abscess of the liver, that a causal relation is supposed by many to exist between them. In the interior valley of this continent, at Cincinnati, the author saw many cases which had succeeded to attacks of malarial fever, and to dysentery—especially proctitis—the lesions of which are situated chiefly or wholly in the rectum. Frerichs,† Murchison,‡ and some other systematic writers, after a thorough examination, maintain the opposite view, that the supposed relation between abscess of the liver and dysentery is merely coincident, and is not causal.

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* Sachs, "Ueber die Hepatitis der heissen Länder," Berlin, 1876. Separat-Abdruck aus v. Langenbeck's "Archiv," Band xix.

† "Diseases of the Liver." Translated by Murchison. Syd. Soc., vol. ii., p. 108.

‡ "Clinical Lectures on Diseases of the Liver," etc. Second edition, p. 177.

Waring's * statistics seem quite conclusive against the view that such a relation exists: thus, "out of 2,758 cases of dysentery treated in the Madras Presidency, abscess of the liver occurred 68 times, being in the proportion of 2½ per cent. nearly." In the same author's 300 cases of abscess of the liver, "hepatitis was the primary affection in 131, or 43 per cent., while only 82, or 27 per cent., were admissions from dysentery. Budd † holds that a poison generated in the intestine by the decomposition of materials from ulcerations is the chief factor in the causation of abscess. Moxon ‡ also maintains that "almost all tropical abscesses are secondary to dysenteric or other ulcerations, and that primary abscess of the liver is at least as doubtful as primary suppuration of the brain." The concurrence of hepatic abscess and dysentery is too frequent not to be related in some way; it is clear that many, but probably not a majority, of the cases thus originate, and, when so caused, the abscesses are pyæmic, multiple, and secondary. Large abscesses of this kind are due to the coalescence of neighboring smaller ones. A large number are doubtless due to hepatitis—the so-called tropical abscesses. A variety of causes are concerned in the production of others. The habits of individuals are not without influence, especially the use of stimulants, highly seasoned dishes, condiments, etc. Suppuration has been caused by the impaction of calculi, by the lodgment of a lumbricoid worm, etc. It is a more common malady in men than in women, and from the twentieth to the thirty-fifth year. A case is reported by Grainger-Stewart, in which abscess of the liver followed dilatation of the bile-ducts.§

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* "An Enquiry into the Statistics and Pathology of some Points connected with Abscess of the Liver, as met with in the East Indies." By Edward John Waring. Trevandrum, 1854.

† "On the Diseases of the Liver," p. 83, *et seq.*

‡ "Transactions of the Pathological Society of London," vol. xxiv., p. 116, 1873.

§ T. Grainger-Stewart, "The Edinburgh Medical Journal," January, 1873.

Pathological Anatomy: That a certain proportion of cases of hepatic abscess are due to embolic deposits, coincident ulcerations existing in the intestine, is probably true, but the facts of observation which support this theory are surprisingly few. Frerichs * reports one example of embolic blocking of a vessel at the site of a commencing abscess, and a few others have been recorded. Förster † holds that a miasmatic infection of the blood is caused by the ulceration in the intestine. Whether it be due to such infection, or to the formation of a thrombus and subsequent embolic blocking of a veinule of the liver, or to hepatitis, or to any other cause, the initial lesion is a hyperæmia of the hepatic cells at the site of the abscess. The cells become cloudy and granular by the presence of an albuminous matter deposited in them. Liebermeister maintains, but he is alone in this opinion, that the initial change is in the connective tissue; but Rokitansky, Virchow, Frerichs, Förster, and others, refer the first changes to the cells of the hepatic parenchyma, and the alterations in the connective tissue to a subsequent period.

Those parts of the hepatic parenchyma in which the liver cells are undergoing disintegration, at first have a reddish yellow appearance, and at some points contain patches of pigment of a bright yellow color, and are surrounded by a translucent pale gray ring. The acini, the seat of this process, are distinctly enlarged, become softer, and disintegrate. The center of each inflamed patch early becomes yellow, which indicates the beginning of suppuration. The size of these points of suppuration is at first small, but those in close proximity coalesce, forming an abscess—a purulent collection. These abscesses are filled with pale yellow pus, and the borders of the collection consist of dark red, disintegrating gland tissue, projecting in the form of softening shreds into the purulent depôt. They vary in size from a pea to a hen's egg, or may attain much larger dimensions. Important changes take place in these purulent collections as they grow older: the walls become smooth, and are lined by connective tissue, the pus thus becoming encysted, or absorption occurs, the walls of the abscess approximate, unite, and ultimately nothing remains but a linear cicatrix. So perfectly does repair go on and is completed, that in some years afterward scarcely a trace of the original mischief can be detected. In other cases no limiting membrane is produced, the inflammation extends, and an enormous purulent collection, which tends to external discharge in some direction, is formed, and enlarges by continual accessions of purulent matter. It does not often happen that such a collection bursts into the peritoneal cavity, exciting fatal peritonitis, but it tends to perforate the abdominal wall, or dissects downward along the spine, discharging in the inguinal region or by the sacrum posteriorly, or it ulcerates through into the stomach, duodenum, or colon, or makes its way upward, perforates the diaphragm, the lungs, and is discharged through the bronchi. These abscesses have also entered the vena cava (case of Colin *), have ulcerated into the pericardium, etc., but such accidents are comparatively rare.

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* "Diseases of the Liver," *op. cit.*

† "Lehrbuch der pathologischen Anatomie von Dr. August Förster." By Dr. Siebert. Jena, 1873, p. 267.

The size of an abscess of the liver varies from an ounce or two to a gallon. In 69 cases in which this point was noted, 16 contained one to two pints, and 12 two to three pints; and these may be regarded as of the usual sizes. As respects limitation by a neo-membrane, the cases are not numerous in which definite statements are made: in 53 the abscesses were encysted in 36 and not limited in 17, but it is doubtful if this relation exists throughout a large number of unselected cases. Of Waring's 300 cases, 169 or somewhat more than one half remained intact; of the remainder, much the largest number of the spontaneous discharges occurred by the thoracic cavity—42—and, of these, 28 occurred through the right lung. As respects the lobe of the liver, which is usually the seat of the abscess, the statistics of various observers agree. Selecting Waring's 300 cases for exemplification, we find that the purulent collection was in the right lobe, alone, in 163, and in both right and left, in 35. The number of abscesses present at the same time is influenced greatly by the cause; in the pyæmic, there may be a dozen or more; in the other form, from 1 to 3 usually.

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* "Gazette Hebdomadaire de Méd. et de Chir.," No. 38, 1872.

Although fetid decomposition is not uncommon,* yet true gangrene is very rare.

Symptoms: Notwithstanding the importance of the organ, abscess of the liver of considerable size may exist without there being any local or systemic symptoms to indicate its presence. These latent cases occur in the course of chronic dysentery and pyæmia, and fail of recognition because masked by existing symptoms, or they are latent because the inflammation occurred in the deepest part of the right lobe, and did not involve the peritonæum, nor did the abscess compress the bile ducts, and was limited by a neo-membrane. A typical case following a recognized injury, or due to impaction of calculi, will present characteristic symptoms, and the diagnosis will be easy, but many other cases may not only be difficult of recognition, but in some a diagnosis will not be possible.

The onset is marked by the phenomena which attend an inflammatory affection; a chill, or chilliness, aching of the back and limbs, headache, a dry skin, a coated tongue, bilious vomiting, increased action of the heart, a rise in the arterial tension, are the systemic symptoms. Locally, there is a feeling of uneasiness, constriction, weight, dragging, and often considerable pain and tenderness, especially if the hepatic peritonæum is involved. In some cases a pain is felt in the top of the shoulder—a tensive pain—and it is experienced in the right shoulder when the right lobe is affected, and in the left shoulder if the left lobe is the seat of mischief, and in some cases in both simultaneously. Its value as a symptom is not great, for it is present in other hepatic diseases, and may be a merely rheumatic or neuralgic pain.

On palpation and mensuration, an increase in the size and density of the liver can usually but not invariably be made out. The area of hepatic dullness is increased in all directions and may be considerably so if the purulent collection is a large one. Pushing up the diaphragm and displacing the lung, the area of dullness, and the absence of voice and breath sounds may extend up to the fourth, to even the lower margin of the third rib, and downward several finger-breadths below the margin of the false ribs, furnishing all the signs of hydro-pneumothorax.*

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* Rigal, "L'Union Méd.," No. 134, 1873.

Jaundice is present in less than one third of the cases, and then varies much in intensity, but it is general, and the urine is loaded with bile pigment, and, when the liver is much damaged, contains leucin and tyrosin instead of urea. Jaundice appears early in those cases of abscess due to the impaction of calculi—soon after or with the initial symptoms, which are those of hepatic colic—and much later in those which are the usual cases, due to the pressure on the hepatic duct, of the abscess.

When pus forms there is usually a decided rigor, and these shiverings recur irregularly, and are followed by fever and sweats. Like the other characteristic symptoms, these are often entirely absent. The fever, chills, and sweats are much more pronounced in the so-called pyæmic abscesses than in those arising from hepatitis. The irritability of the stomach is enhanced by the occurrence of suppuration; the frequency and persistence of the vomiting at this period is an important indication, much insisted on by Maclean † and Fayrer. ‡ The vomiting may have the bilious character, with a large evacuation of bile, and the alvine dejections may have the same character; the vomit may consist of watery mucus, and, rarely, of blood. There will be an increase of the dysenteric symptoms, if this disease had been in existence when the abscess formed, or diarrhœa or dysentery may occur when suppuration takes place. The size of the liver lessens somewhat, and the area of hepatic dullness diminishes when pus forms, if the abscess be inclosed; but, if no limiting membrane is formed, the dimensions of the organ gradually enlarge. The diminution in size is maintained, and a gradual return to the normal is the rule, when the pus is absorbed and the cavity cicatrizes. Fluctuation is felt and can be detected only when the purulent collection attains to great dimensions.

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* Rigal, "L'Union Méd.," No. 134, 1873.

† "The Diagnostic Value of Uncontrollable Vomiting," Dr. W. C. Maclean, "British Medical Journal," August 1, 1873.

‡ Sir Joseph Fayrer, ibid., September 26, 1873.

If the abscess tends to spontaneous recovery by absorption, or after discharge of pus, the local pain and tenderness subside, the pulse falls to the normal, the stomach is no longer irritable, appetite returns, and digestion is resumed. If, however, the abscess enlarges, the distress in the hepatic region and the tenderness increase; movements, especially of breathing and coughing, awaken deep-seated soreness and pain; breathing becomes difficult by pressure on the lungs; the heart is sometimes displaced upward and to the left, which adds to the existing præcordial uneasiness and to the difficulty of breathing; and a harassing and painful short, dry cough, induced by irritation of the pneumogastric and phrenic nerve-filaments, adds greatly to the distress.

As a tendency to discharge through the right lung exists in a large proportion of cases, the base of this lung and the neighboring pleura are affected by a localized pleuro-pneumonic process, with the usual physical and rational signs of that complication. Adhesion of the pleural surfaces takes place, and a channel is formed communicating with a bronchus, through which discharge occurs. Less often a secondary suppurating cavity is constructed by the pleural adhesions. Rarely the pericardium is opened, and death caused by sudden distention of the sac with pus. If rupture takes place into the peritoneal cavity, this untoward accident is announced by sudden, intense pain and collapse; if into the intestine, purulent and bloody evacuations indicate it, while lessened size of the liver and less tension and pain, also, coincide; if the pus dissects outwardly through the hypochondrium, a large, puffy, and fluctuating tumor forms.

The variations in the symptoms of hepatic abscess are very remarkable. There may be no local symptoms—no pain, no tenderness, no enlargement. When the purulent collection tends downward below the ribs, there may be fluctuation, and when it has attained to great dimensions; but it is a comparatively rare symptom. In much the largest number of cases, the pus forms in the upper and superior part of the right lobe, in a situation where fluctuation can not be developed. Pain may be entirely absent: in Waring's 300 cases of hepatic abscess, pain was not present in 20. The reflex shoulder-pain is much less constantly experienced; it is more frequently wanting than it is felt. Gastric derangement of any kind may not exist, and the patient may have a good appetite. The importance of severe vomiting as a symptom of suppuration is not impaired by the fact that exceptional cases are encountered, but vomiting and severe and uncontrollable vomiting is highly significant, and very rarely absent. Vomiting is increased by extension of disease to the peritonæum, and by pressure of an enlarging abscess directly upon the stomach. Although the bowels may be undisturbed in exceptional cases, dysentery is present in a considerable proportion—according to Waring, in 82 in 300 cases—but dysentery sometimes succeeds to the abscess, and is apparently caused by it. Ascites occasionally occurs when the abscess compresses the portal, and jaundice usually accompanies it, for the common or hepatic duct is encroached on at the same time.

Course, Duration, and Termination: So much obscurity exists in regard to the initial symptoms, so much variation in the behavior of cases, that no defined course can be laid down. The duration is equally uncertain and irregular. A typical case without complication may pass through its several stages in about 70 days if the pus is discharged by a favorable channel; if the pus undergoes absorption, and the cavity closes by cicatrization, several weeks longer will be necessary. The initial symptoms will occupy less than a week, for suppuration appears in a short time after the hyperæmia, and the breaking down of the hepatic tissue proceeds rapidly, so that an abscess of considerable size will form in seven to ten days. Then comes on a period of septicæmic fever—remittent in type, with irregular sweats, in the acute cases with abscess of large size, and intermittent with long periods of freedom from fever in the subacute and chronic cases, with abscess of moderate size. The course of abscess of the liver is much affected by the development of a limiting neo-membrane. When this membrane is formed, if no complications are present, there may be a "latent period" of considerable duration —a period characterized by the absence of local and systemic symptoms. This quiescent state may continue several weeks, months even; then acute symptoms arise, which are often misinterpreted, and supposed to be the initial symptoms, and the abscess formed, the product of the recent disturbance. If, on the other hand, there is no limiting membrane formed, and the suppuration extends, the septicæmic fever persists, and the patient sinks into a typhoid state, with low, muttering delirium, and death from exhaustion.

Cases of acute abscess without complication, discharging in a favorable direction, recover with considerable promptitude. Early and successful use of the aspirator for the evacuation of pus shortens the duration of a case materially. Convalescence is very tedious when fistulous communication exists through the lungs, the parietes of the abdomen, and elsewhere. The author has met a case of fistula of the right hypochondrium discharging somewhat after eighteen months. During the existence of such purulent formation and discharge, night sweats, diarrhœa or dysentery, a poor appetite, and feeble digestion combine to maintain a condition of debility for a long time, or there may be a continuous, gradual failure, terminating in exhaustion and death. In the acute cases which terminate fatally there are usually intense hectic, profuse sweats, uncontrollable vomiting, and rapid failure of the vital powers. The cases associated with dysentery are very protracted and very fatal; they rarely cicatrize, and less frequently discharge externally than do the uncomplicated cases (Frerichs).

The condition of patients who recover is not always that of health. Very often the intestinal digestion is impaired because of the insufficient supply of bile, and the functions of the stomach and intestines interfered with by adhesions and contracting bands of lymph which limit the movements of these organs, and narrow their capacity, or obstruct the passage of their contents.

Prognosis: How favorable soever may be the apparent condition in any case of hepatic abscess, the prognosis must be guarded, for unexpected complications may arise, and the known dangers are uncertain in their behavior. The pyæmic abscesses are more numerous, are due to a poisoned state of the blood, and are always fatal. The direction taken by the abscess is an important element in coming to a conclusion;

discharge by the lungs is most favorable; by the external integument the next, and by the intestinal canal, third. Early evacuation by the aspirator lessens materially the dangers and must enter into the question of prognosis. In 81 cases of hepatic abscess evacuated by operation, collected by Waring, there were 15 recoveries—18·5 per cent. In McConnell's * 14 cases in which the aspirator was used, 6 died and 8 recovered—57 per cent. Both sets of statistics were gathered in India, but the former were cases which occurred before 1850, and the latter since the aspirator came into use. Of 25 cases of recovery without interference, also by Waring, there were 10 in which the matter was discharged through the lungs, and 7 by stool. The size of the abscess, its position, the condition of the patient in respect to digestion and nutrition, and especially the presence or absence of complications, are elements which must be taken into consideration in coming to conclusions.

Diagnosis: Hepatic abscess may be confounded with echinococcus of the liver, dropsy of the gall-bladder, scirrhus, abscess of the abdominal wall, effusions, especially purulent, into the right thoracic cavity, etc.

A tumor or enlargement formed by echinococci is unaccompanied by pain or tenderness, the growth is slow and without constitutional disturbance, when palpated is elastic, fluctuating, and furnishes that most characteristic sensation, "the purring tremor." An abscess of such a size would be accompanied by pain, tenderness on pressure, by septicæmic fever, at least frequently; there would be wasting and diarrhœa, often severe vomiting, and the sense of fluctuation would be free from purring tremor. The very important aid to diagnosis afforded by the exploring trocar should not be neglected, and its indications may indeed be decisive. The fluid of an abscess is purulent, and if hepatic contains portions of the tissue of the liver; † if of an hydatid cyst, a straw-colored, serous fluid, containing the characteristic echinococcus hooklets.

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* "Remarks on Pneumatic Aspiration, with Cases of Abscess of the Liver treated by this Method." "Indian Annals of Medical Science," July, 1872.

† Dr. Samuel Fenwick, "Lancet," November 17, 1877, "On the Detection of Particles of Hepatic Structure in Abscess of the Liver." The

An enlarged gall-bladder is a pyriform tumor of variable size, elastic and fluctuating when its contents are fluid, or hard and nodular when enlarged by calculi. When the accumulation is a product of the metamorphosis of bile and mucus, the growth is very slow, and the symptoms *nil*—a very different history from that of abscess; on the other hand, a purulent fluid forming, will be accompanied by hectic, sweats, emaciation, etc., and a differentiation is not possible. In cases of this kind there has been a history of attacks of hepatic colic; the last one having terminated the series by a closure of the cystic duct.

Abscesses of the abdominal wall of large size, and situated in the right hypochondrium, may be very confusing, but the distinction may be made, by the history, which does not include any disturbance in the hepatic functions, and has not been preceded by any symptoms of disease of any kind. The history begins with the formation of a tumor in the hypochondrium. The most certain means of diagnosticating consists in the microscopic examination of the purulent matter, and in determining by the passage of the aspirator needle that the pus is contained in an abscess exterior to the ribs. It is impossible to decide between an hepatic abscess and an abscess found between the hepatic and parietal peritonæum, which may be the result of a local peritonitis, or of an hydatic cyst undergoing destruction by suppuration.

Multiple abscess of the liver has been mistaken for cancer of the stomach.* The pain, vomiting, wasting, may mislead, but the marked difference in the history of the two affections, as well as the local symptoms, ought to prevent such an error.

The most difficult problem in the diagnosis of hepatic abscess is the distinction between abscess and empyema, or hy-

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pus is shaken up with some distilled water and put aside in a conical wineglass. When settled it is examined with the microscope, or it is shaken up with some distilled water to which a few drops of ammonia have been added.

* Dr. W. Crumb, "Philadelphia Medical and Surgical Reporter," March 14, 1873.

drothorax. Besides the evidence of the accumulation of fluid filling in the space from the diaphragm to the fourth, even to the third rib, there are almost always present the symptoms of a pneumonia in preparation for the evacuation by the lung. The physical signs will be the same, but the history of the case will exhibit important differences: in the one case the accumulation of fluid will have been preceded by the signs and symptoms of pleurisy or pleuro-pneumonia; in the other, by the signs and symptoms of hepatic inflammation. Here, again, the aspirator may be invoked to make the diagnosis clear—the presence or absence of bits of hepatic tissue will prove the abscess to involve or not the liver substance.

Treatment: As suppuration occurs so promptly after the initial hyperæmia, it is doubtful whether any effort to prevent the formation of pus can be successful, but the extension of the area may be checked or limited. As soon as the symptoms manifest themselves, a large dose of quinia (twenty grains) should be given at once, and decided cinchonism be maintained by the same dose at proper intervals, or by smaller doses more frequently. That quinia has the power to check the migration of the white corpuscles is well established, but it is equally true that large doses are necessary to accomplish this. Morphia should be combined with it, unless some contra-indication exist, and especially if there be much pain and the peritonæum is involved. Warm fomentations and turpentine stupes should be applied over the right hypochondrium.

At the earliest moment when the existence of pus can be made out, or there are good reasons to suspect its presence, an exploratory puncture with the aspirator should be made. The recent experiences of Cameron,* Condon,† and Sachs ‡ have demonstrated that, when the pus can be reached and evacuated, a very large proportion of cases recover immediately. It is a remarkable fact that many cases in which the symptoms of abscess exist, and yet no pus is found, are greatly benefited by the puncture. The modern experiences have demonstrated, also, that, penetrated by suitable needles, no injury is done to the liver, and that repair takes place so perfectly that after death no trace of the operation is visible. The necessity for early evacuation of the pus consists in this, that only a portion of these abscesses are confined by a limiting membrane, and that those thus restricted do not long remain encapsulated, but tend to make their way externally. In Condon's collection of cases there were 8 of abscess evacuated by the trocar, of which 4 recovered, and 3 of hepatitis, without suppuration, in which the trocar was inserted deeply in the right lobe, all of which were much relieved by the puncture and promptly cured. In Sachs's collection of 21 cases there were 8 recoveries after puncture—being in the proportion of 38 per cent. Under the old system of using the knife or trocar, when the pus was already pointing, as represented in the statistics of Waring, there were 66 deaths in 81 cases, making the percentage of recoveries 18·5.

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* The London "Lancet," 1868, June 6th and 13th—"On the Treatment of Acute Hepatitis in its Suppurative Stage."

† Ibid., August, 1877, Dr. E. H. Condon—"On the Use of the Aspirator in Hepatic Abscess."

‡ "Ueber die Hepatitis der heissen Länder, etc.," von Dr. Sachs in Cairo, *op. cit.*

When the abscess is large, and repeated punctures necessary, the author has had excellent results from the injection of tincture of iodine; it lessens the formation of matter and prevents its decomposition.

Mercury was formerly much used in all hepatic affections, but that it is injurious in abscess is now disputed by no one. It is probable that the sulphides, so much and successfully employed in external suppuration, will be found adapted to the treatment of hepatic abscess. The sulphides of sodium and calcium, and the sulphurous mineral waters, are suitable agents to be so exhibited.

As the vital resources of the patient are severely strained the strength should be carefully husbanded from the beginning. The diet must be generous, and stimulants judiciously administered. When suppuration has occurred, the alcoholic stimulants must be given freely. For the dysentery present in so many cases, ipecac is the best remedy, if prescribed in the necessary quantity—℈j every 3 or 4 hours. If there are present old ulcerations of the intestinal tract, copper sulphate is an efficient remedy; but, usually, the astringents in turn will be administered in vain.

GENERAL PARENCHYMATOUS HEPATITIS—ACUTE YELLOW ATROPHY.

Definition: As the hepatitis terminating in suppuration is confined to a part of the liver, it has been designated Local Parenchymatous Hepatitis, while the term General Parenchymatous Hepatitis is applied to Acute Yellow Atrophy, which consists in an acute diffused inflammation involving the whole organ, and terminating in atrophy. Various names have been applied to this disease, as "malignant jaundice," "typhoid icterus," "hæmorrhagic icterus," etc.

Causes: Various theories have been proposed to account for the origin of acute yellow atrophy. It has been referred to an excess in the production of bile, to stasis of the bile, to sudden saturation of the hepatic cells with biliary matters contained in the blood of the portal vein. Budd supposes it to be caused by some special blood poison of unknown nature, which acts especially on the liver. These hypotheses are without facts to support them. That it is an acute, diffuse, parenchymatous inflammation is established by the most recent investigations, but the exciting cause of this inflammation remains unknown. That it is in the nature of a specific morbid poison seems probable, since other organs are simultaneously attacked. There are certain points in the etiology of the disease, however, which are well known; it occurs most frequently in the female sex, and during the state of pregnancy. According to the statistics of Frerichs, in 31 cases of this disease 22 were females, and one-half of these were attacked during the state of pregnancy. It occurs from the third to the sixth month of pregnancy, and in comparatively young subjects, under forty, and rarely indeed after thirty years of age.

Other causes have supposed to exert an influence in its production: as anger—a violent passion having been the apparent cause in cases reported by the older writers—venereal excesses, syphilitic infection, and local miasms. Acute atrophy of the liver has been induced by the changes resulting from typhus fever. A condition analogous to it is brought about by the action of phosphorus, arsenic, antimony and certain other minerals, and a similar state has been induced by subacute alcoholismus (Rendu).

Pathological Anatomy: The liver presents a most characteristic appearance—it is much smaller, flattens out by its own weight, is soft so that it tears easily, and has a uniform yellow color. The peritoneal layer is roughened and wrinkled. On microscopical examination, the changes seen are those due to interstitial and parenchymatous exudation. There is, at first, an hyperæmia, traces of which are discoverable at various points, the rest of the organ being anæmic, a result of the subsequent atrophy and obliteration of vessels. Between the lobules there is deposited a grayish-yellow material, which widens the interlobular space, and in those cells which are still recognizable is contained a quantity of an albuminous and fatty matter mixed with pigment.* In the place of the disintegrated cells there is formed a quantity of brownish, fatty granular matter; fat globules; pigment; bacterian colonies† and needles of tyrosin and leucin. The ultimate radicles of the portal system and the hepatic artery are obstructed or obliterated.

The kidneys also undergo characteristic changes, especially in the cases occurring in pregnancy. The organs are thoroughly stained by the icteric urine, especially the endothelium of the tubules, and, besides, the cells of the endothelium have become infiltrated by a granular albuminous matter, and are undergoing fatty degeneration. The urine is heavily loaded with bile pigment, and usually contains some albumen; the urea is diminished or has disappeared, and is replaced by leucin and tyrosin. In the normal condition of the liver, it is now regarded as probable that the urea which is eliminated by the kidneys is produced in the former organs by the metamorphosis of the albuminoids. The blood contains considerable urea, and much leucin in acute atrophy of the liver.

The spleen is usually, but not invariably, increased in size. The muscular tissue of the heart undergoes more or less fatty change, but this alteration is common to many acute diseases. Spots of ecchymosis form in the peritonæum, the gastro-intestinal mucous membrane, in the skin, etc., and indicate the destructive changes which have occurred in the blood.

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* Drs. Lowitski u. Brodowski—Virchow's "Archiv," Band 70, p. 421—"Ein Fall von sogenannter acuter gelber Leberatrophie."

† Ibid., Band 43, p. 533. Waldeyer.

Symptoms: This formidable malady begins insidiously—as a simple catarrh of the stomach and duodenum, with a slightly coated tongue, nausea and vomiting, headache, tenderness of the epigastrium, and a slight icterode hue of the skin, which gradually deepens. There is some acceleration of the circulation, and slight fever, which, however, are not constant, for the pulse may and usually does have the feebleness and slowness belonging to jaundice. The duration of these mild symptoms is by no means constant—they may occupy a week or more; and, from the appearance of decided jaundice to the onset of the serious symptoms, there may be a few hours to two weeks. Sometimes the severe symptoms come on with the jaundice and a day or two before the temperature rises. An obstinate insomnia now begins, and the headache becomes intense. This period has, by some,* been entitled the *icteric period.* According to Frerichs, the sesymptoms of gastro-duodenal catarrh exist in about one half of the cases, and the duration of them may be from three to five days, although in some cases they last two to three weeks. In one case † an attack of jaundice preceded, by several months, the fully developed attack.

A rise of temperature either precedes or accompanies the serious symptoms—the *toxæmic period.* The pulse becomes very rapid, rising to 140, but suddenly again, without any apparent reason, it may be, or in consequence of hemorrhage, falling again to 70 or 80. These fluctuations, which may occur several times a day, are peculiar to the disease. When the cerebral symptoms come on, the pulse becomes uniform at 140 to 160. The temperature line is of the remittent type, with a morning remission (102° Fahr.) and an evening exacerbation (104° Fahr.). Jaundice is constantly present, and gradually deepens from its first appearance; and intermixed with it are large brownish ecchymotic patches, but these are not always present. The tongue and gums are brownish, dry, and covered with sordes and crusts, and the breath is fetid. There are much nausea and vomiting, and severe pain is experienced in the epigastrium and through the right hypochondrium, and pressure over the hepatic region awakens severe pain. A diminution in the size of the liver can be readily made out by percussion, and at the same time and relatively an increase in the dimensions of the spleen. There is constipation in the beginning, followed by more free tarry stools, the product of intestinal hemorrhage. During the first vomiting, mucus and bilious matters are discharged; but, when the toxæmic symptoms come on, blackish, grumous blood or "coffee grounds" are ejected.

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* Jaccoud, vol. ii., p. 418.

† Dr. Joseph Coats, "The British Medical Journal," June 26, 1875.

There is more or less epistaxis, bleeding of the gums, as well as vomiting of blood, and ecchymoses form at various places. The urine is usually normal in quantity, acid in reaction, and has the normal specific gravity. When delirium and coma exist, the urine is either retained or passed involuntarily. Very great changes are noted in its composition: the urea is greatly diminished in amount, the phosphate of lime disappears, and a great quantity of leucin and tyrosin and extractives are substituted. It contains also bile-pigment and traces of albumen, and cast-off epithelium deeply stained with bile-pigment.

There must necessarily accumulate in the blood those excrementitious matters which it is the office of the liver to separate from the blood, and this fluid is deprived of those contributions to it, made by the action of the bile in the digestion of certain aliments. We can not therefore subscribe to the doctrine of Flint, who assigns to cholesterin the toxic effects, which are doubtless produced by several excrementitious matters. Instead of the "cholesteræmia" of Flint, we hold to the older term, cholæmia or acholia.

These poisonous materials act on the nervous system in a manner similar to a narcotic poison, producing at first a stage of excitation, followed by depression. A hypochondriacal state, with irritability and restlessness, is the first manifestation of mental disturbance, but this is soon followed by noisy delirium. From this state to low-muttering delirium and coma the transition is quick; or convulsions, local twitching, cramps, and general epileptiform attacks occur, soon passing into coma and insensibility. Sometimes death takes place in tetanic spasm.*

Course, Duration, and Termination: The behavior of acute atrophy of the liver is irregular: the prodromic period, the stage of jaundice, and the toxæmic stage, are uncertain in duration, but the last stage follows a more uniform plan. After the development of the jaundice period, from the rise of temperature and the insomnia which mark the onset of the toxæmic stage till death, the most usual period is five days. The prodromic stage may last a week or two, the jaundice stage from a day or two to two weeks, the toxæmic stage a week, but the rule is that the whole course of the malady is included within a week. The termination is in death. Some successful cases have been reported, but it is doubtful if they were genuine. It may be that many cases treated carefully at the outset have been arrested and cured, but such cases are, as far as we are informed, simply cases of jaundice from catarrh of the bile-ducts. When the hepatic cells are disintegrated, a cure can hardly be possible.

Diagnosis: Acute atrophy is probably more frequently overlooked than recognized. It is impossible to differentiate the gastro-duodenal catarrh of this disease from the ordinary examples of the same disease. Great importance must be attached to the increased headache, rise of temperature, and obstinate wakefulness which mark the onset of the toxæmic stage. As so many of these cases occur in pregnant women, they are apt to be confounded with puerperal fever, puerperal septicæmia, etc.; but the physical signs of a rapidly diminishing liver, the nervous phenomena, the hemorrhages, and especially the changes in the urine, will serve to distinguish between them.

Treatment: Frerichs reports a supposed case of acute atrophy, which got well under purgatives and mineral acids. This appears to be the routine treatment. If the disease had any relation to the amount or quality of the bile, the use of podophyllin, euonymin, ipecac, and other remedies of the same group, is indicated, and mineral acids should be given freely, well diluted, in small doses frequently repeated. As the disease is a diffuse parenchymous inflammation, the best results will be obtained from the use of a large dose of quinia and morphia in the incipiency, but will be useless when the liver-cells have begun to disintegrate. The author advises the trial of very small doses of phosphorus, as early as possible, as this remedy affects the organ specifically, and an action of antagonism may be discovered between them. This remedy, as all others, will fail to do the least good, if disintegration of the cells has occurred. Alcoholic stimulants should be pushed freely, notwithstanding a condition not unlike acute atrophy has been lately observed from subacute alcoholismus.*

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* Morand, "Gazette des Hôpitaux," 20, 21, 1873.

ART. II.—*The Functions and Disorders of the Liver, and their Management in Accordance with the Results of Modern Discovery.*† By HORACE DOBELL, M. D., Consulting Physician (late Senior Physician) to the Royal Hospital for Diseases of the Chest, London.

THE practical sagacity of the ancient physicians and the common sense of humanity for ages kept up a widespread belief that the most conspicuous viscus in the body must play a somewhat proportionately conspicuous part in the organism. Hence an endless variety of ills were attributed to derangements and diseases of the liver. For many years these ideas were smiled at by those who thought themselves so much more enlightened than their predecessors as to have learned that the liver was made for nothing but the secretion of bile and that bile was nothing but a waste product of the body. Recent scientific discovery, however, has turned the smile against the skeptics, amply confirming the impressions of our ancestors, and placing the liver on the very pinnacle of clinical, physiological, and pathological importance.*

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* M. H. Rendu, "Note sur deux cas d'alcoölisme subaigu ayant donné lieu à des accidents comparables à ceux de l'ictère grave." "La France Médicale," Sept. 17, 1879.

† Being the new chapter about to appear in the forthcoming second edition of "Loss of Weight, Blood-Spitting, and Lung Disease."

In reading over my own book in its first edition, I am impressed with the feeling that it does not represent to the full extent the importance which those who are familiar with my daily practice well know that I attach to the liver, in connection with loss of weight, blood-spitting, and lung disease. I have therefore added this supplementary chapter to supply the deficiency. At pp. 215, 217, 249, I have spoken of the importance of attending to the action of the liver, and at p. 152 I have referred to some laborious investigations which I made so long ago as 1853 with reference to fatty liver in consumption. But in all these places the liver is only referred to in its subsidiary connection with the general argument regarding the action of the pancreas. In this chapter I shall reverse the order and give precedence to the liver. The importance of the liver in connection with our present subject may be considered under six principal headings:

1. Its connection with digestion and assimilation of the fat elements of food (hydro-carbons).

2. Its connection with the digestion and assimilation of the saccharine and amylaceous elements of food (carbo-hydrates).

3. Its connection with the digestion and assimilation of nitrogenous elements of food (albuminoids).

4. Its connection with the disintegration of nitrogenous matter.

5. Its liability to congestion when the pulmonary circulation is obstructed in front, with consequent disturbance of its functions; this retrograde congestion and disturbance of func-

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* Among modern laborers in this field, the following may be specially mentioned; Kiernan, Budd, Rokitansky, Frerichs (whose work has been popularized in English by the valuable translations and *rechauffés* of Murchison), Bernard (whose discoveries have been subjected to important correction by Pavy), Wickham Legg, Parkes, Habershon, Harley, Rolleston, Rutherford, Warburton Begbie, Gilbert, Morehead, Waring, Wilks, Gamgee, Brunton, Grünewald, Krueger, Schiff, Röhrig, Nasse, Bocker, Radziejewski, Kuhne, Recklinghausen, Klein, Staedeler, Neukomm, Eulenberg, Brown-Séquard, Rouis.

tions extending in due course to all the organs which contribute to the portal circulation.

6. The apparently anomalous and puzzling fact that fatty enlargement of the liver is especially apt to occur when all the rest of the organism is wasted by consumption.

This remarkable combination of circumstances seems to invest the liver with so much interest in relation to loss of weight, blood-spitting, and lung disease, that we are astonished to find how little is said about it in any of the existing works on consumption.

If we take a bird's-eye view of the organism—with its general plan of a venous system separated inviolably from an arterial system by the lungs, and a great food-supplying apparatus for the generation of blood and tissues, and for the evolution of heat and other modes of motion—the liver strikingly attracts our notice, as a huge machine placed as peremptorily between the food supply and the pulmonary circulation as are the lungs between the veins and the arteries, intercepting every particle of new food that can be absorbed by veins. So jealously is this shut off from the lungs, that the blood of the hepatic artery, after ministering to the nutrition of the liver itself, and even that of the vasa vasorum of the hepatic veins, is returned to the portal vein before it is allowed to reach the lungs. We can not for a moment doubt, when we regard this imperative arrangement for interception, that is has some most vital purpose.

The next thing that most forcibly strikes us in this bird's-eye view is a similarly peremptory arrangement, by which everything absorbable by lacteals and lymphatics is scrupulously kept out of the way of the liver, and, after passing through a system of glands, is conveyed by the thoracic duct directly to the lungs. And again we are struck by the definite arrangement by which all the venous blood of the body, other than that charged with new food, is, like the contents of the thoracic duct, kept out of reach of the liver, and conveyed directly to the lungs.

We find that, by these mechanical arrangements, all worn-out tissues, all fats not absorbed by the portal system of veins, all the products of interstitial nutrition, are submitted directly to the pulmonary circulation, but that all the other elements of nutrition *must be submitted to the operations of the liver* before they are fit for use in the organism.

What, then, are the effects of these important operations?

1. First and foremost in every way is the conversion of the carbo-hydrates of the food, and probably some of the albuminoids, into a material called Bernardin,* amyloid matter, or glycogen. It matters not by which of these names it is called, but I prefer the first, so that it is clearly understood that, from the time the food is converted into this body, it becomes utilizable as a source of force and nutrition, and that—so long as the functions of the liver are normal, and the quantity of carbo-hydrate food introduced is not in excess of the maximum capacity of these functions—only a trace of sugar *per se* escapes conversion into Bernardin, and is allowed to reach the pulmonary blood, any excess of this being rapidly excreted by the kidneys, constituting diabetes.

2. The second effect is the interception of so much of the fats as are absorbed by the portal system of veins (almost entirely oleine) for the manufacture of bile, only the surplus over and above what is employed for this purpose being allowed to reach the lungs by the hepatic veins. All the solid fats, and the bulk of all fats, are saved from the liver—being emulsionised by the pancreatic secretion, and conveyed to the lungs by the lacteal route.

3. The albuminoid materials of food absorbable by the portal system of veins are disintegrated in the liver, leading to the formation of urea and other nitrogenous products, afterward excreted by the kidneys. In the performance of this and other chemical processes, the liver becomes a great center of animal heat, the temperature of the liver reaching 104° to 106° Fahr., when all the rest of the body is at 98° and 99°. It is important to remember that the blood of the portal vein when it enters the liver contains the blood from the spleen, and that probably in connection with this is the fact that the

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* After Professor Bernard, the discoverer of this material (at the suggestion of Dr. Pavy).

worn-out red blood-disks are cast into the liver—forming part of that copious supply of nitrogenous matter poured into the liver, the disintegration of which has already been referred to as a source of animal heat, and in the course of which blood pigment is probably converted into bile pigment, and bile pigment into urinary pigment. It is not certain, however, that bile pigment and the biliary acids are not secreted from the blood of the hepatic artery. But, as I have already mentioned, the venous return of the hepatic artery is into the portal circulation.

4. We come next to the special secretion of the liver, that rich, complex, abundant, and important fluid, THE BILE, poured out at the rate of about two pints every twenty-four hours, not less than thirty-nine fortieths of which is returned to the blood during its passage through the biliary and intestinal tract—in the course of that great and important osmotic circulation constantly going on between the fluid contents of the bowel and the blood. The amount of fluid poured into the intestines and reabsorbed in twenty-four hours, says Professor Parkes, "is almost incredible, and constitutes of itself a secondary or intermediate circulation never dreamt of by Harvey. The amount of gastric juice alone passing into the stomach and then reabsorbed amounted, in a case lately examined, . . . to nearly twenty-three imperial pints (if we put it at twelve we shall certainly be within the mark). The pancreas . . . furnishes twelve pints and a half in twenty-four hours, while the salivary glands pour out at least three pints . . . The amount of the bile is probably over two pints. . . . The amount given out by the intestinal mucous membrane can not be guessed at, but must be enormous. Altogether the quantity of fluid effused into the alimentary canal in twenty-four hours amounts to much more than the whole amount of blood in the body. . . . The effect of this continual outflowing is supposed to be to aid metamorphosis; the same substance, more or less changed, seems to be thrown out and reabsorbed until it is either adapted for the repair of tissue or has become effete."

As regards that small proportion of the bile (not more than one fortieth of the whole) which is excreted through the intestines, it acts as a potent antiseptic upon the contents of the bowel, stimulates peristaltic action, and in this way, as well as by giving a proper consistence to the fæces, assists in their regular discharge, and it rids the system of those waste products of blood and tissue which can no longer yield up nutriment or force to the organism. It is a striking fact that all the digestive fluids, from the saliva downward, promote decomposition until we come to the bile, which, for the first time, reverses the action and interposes an antiseptic, thus maintaining the *status quo* of the proceeds of digestion until they are absorbed or cast off as waste, and staying the evolution of gases in the passage of this waste out of the body.

In diseases attended with copious expectoration, a special importance attaches to the antiseptic properties of bile; for it is inevitable that a considerable portion, in some cases the whole, of the matter intended for expectoration will pass from the respiratory down the alimentary tract, where it will decompose and act as a septic poison, unless this is prevented by some antiseptic agent. I have laid so much stress in other parts of this work upon the vital importance of antiseptic treatment in tuberculous blood-poisoning, or tuberculæmia, that I need not do more in this place than call attention to this as another reason for promoting a proper flow of normal bile.

It is that large proportion of the bile (about thirty-nine fortieths) which is reabsorbed with which we are more especially concerned in considering the question of loss of weight. We can not fail to be struck with the consideration of how largely the nutrition of the body must be interfered with, if, through faulty action of the liver, this enormous daily contribution to the new formative materials of the body is either cut off or ill elaborated, or if, after being duly elaborated and poured into the intestines, it is cast out of the body instead of being absorbed. (See p. 152.)

But in addition to the direct supply of nutriment by the action of the liver, the bile has an indirect influence on nutrition equally important. Not only is its passage into the intestines in some way essential to that formation of Bernardin (amyloid substance or glycogen) out of the carbo-hydrates, about which I have already spoken, and instrumental in facilitating the digestion of the albuminoid constituents of food, but experiments have shown that the presence of a weak solution of soda or potass in the pores of an animal membrane materially assists the passage through it of emulsionized oil and fat; and we find in the alkaline bile, diluted with the other digestive fluids, exactly what is wanted to saturate in this manner the lining membrane of the alimentary canal, and thus to facilitate the important process of absorption of fat. There can no longer be any doubt that one of the great purposes of the liver is to assist by these means in the supply of fats to the blood by the lacteal route.

It will be recollected that in the course of this work I have again and again pointed out the importance, in all cases of wasting and especially in tuberculosis, of supplying an abundance of carbo-hydrates in the diet, partly as a means of contributing to the formation of fat from this source, but still more with a view to supplying materials for the evolution of animal heat and other modes of motion in the form of carbo-hydrates, and thus reserving all the hydro-carbons possible for histogenesis and other purposes for which fat, and fat only, can suffice. (See pp. 154, 158, 217, 222, 223, 229.) And now that I have shown that the liver is the organ principally concerned in converting these carbo-hydrates into Bernardin, and thus fitting them for utilization in the organism, we shall again be impressed with the necessity of securing a proper performance of this essential function.

We come now to consider more minutely the relation of the liver to the fat absorbed from the food into the *portal venous system*, and then its relation to fat absorbed during interstitial nutrition into the *systemic venous system* so intimately connected with those wasting processes attended with loss of weight. We shall then be in a position to understand "the apparently anomalous and puzzling fact that fatty enlargement of the liver is especially apt to occur when all the rest of the organism is wasted by consumption" (see *ante*, p. 596).

We have seen that the liver must be regarded as a great intercepter of sugar and of oil from the lungs, and that, when it is in the full possession of its functions, only a trace of sugar *per se* or of oil *per se* reaches the hepatic vein unless it is introduced into the portal system in greater quantity or at a greater rate than the maximum normal functions of the liver can manage to deal with ; that thus the presence of either sugar or oil (*per se*) in any quantity in the hepatic vein must be regarded in the *light of an overflow*, indicating that the functions of the liver are either defective or overtaxed.

Now, with regard to overtaxing the liver with oil, which is the part of the subject which concerns us at present, experiment and investigation show that a large margin for variation has been allowed within the bounds of health. No harm to the system results from an overflow of oil from the liver into the pulmonary blood, for it only augments that much larger quantity purposely conducted there directly by the lacteal route, although there is this important difference between the fat overflowing from the liver and that conducted by the thoracic duct, that *the former has not been emulsified by the pancreatic fluid or elaborated by the mesenteric glands.* Still it does not appear to do any harm that a certain amount of oil should in this way overflow from the liver into the lungs, but on the contrary, as I have pointed out more than once in this book, and especially at p. 221, it is in this way that under the circumstances of impending danger, where tuberculosis is imminent through the stoppage of fat by the lacteal route, "in this emergency, in the hurry of this moment, *cod-liver oil* is such a godsend to the patient. It is the kind of fat that can be hurried most rapidly into the pulmonary circulation; it is the fluid oleinous kind of fat that can pass by the portal instead of by the lacteal route." Yet what we have to consider in this place is that it does so in the character of an overflow at the expense of overtaxed functions.

As a large margin is allowed within the bounds of health for this overflow of unpancreatized oil into the lungs, so also is there a large margin allowed within the bounds of health for the *oil-intercepting* function of the liver. Although it is most probable that, under normal conditions, the only object with which fat enters the portal circulation is as a contribution to the biliary secretion, yet it also appears probable that provision has been made within the bounds of health for enabling the liver to become a channel, in the manner I have indicated, by which oil may be temporarily supplied to the pulmonary blood, and to bear this overtax and overflow without permanent disease being produced in the organ. As a matter of fact, it is found that, under temporary overtax, a fatty condition of liver may occur, *such as morbid anatomists would recognize as disease*, and yet the organ resume a perfectly healthy condition when relieved of this overtax of its functions.

But this power of restoration depends upon the duration and amount of the overtax, and is lost in proportion as the morbid condition is prolonged or excessive. It is this combination of circumstances which has been so cruelly and loathsomely taken advantage of for the artificial production of fatty liver in the Strasburg geese for the sake of manufacturing *pâté de foie gras*.

In the normal state the oil which enters the liver with the portal blood is deposited in the hepatic cells, whence it is absorbed for the formation of bile; but in the abnormal state, produced by prolonged or excessive overtax, the accumulation of oil in the cells becomes so great that it compresses or excludes their other contents, thus stopping their secreting function, obstructing the portal circulation, and leading to the well-known consequence of portal congestion—loss of appetite, depraved or arrested digestion and assimilation, gastro-intestinal catarrh, hæmorrhoidal affections, etc.

It is in this way that troubles arise from the incautious use of cod-liver oil, especially when lacteal absorption is at a standstill. I pointed this out at p. 223. When speaking of the value of cod-liver oil, I said: "As a temporary substitute for natural fats introduced by the natural route, it answers admirably, but sooner or later, in some cases very soon indeed, the portal system becomes choked, and refuses to absorb more oil; the oil disagrees with the stomach, it rises, it spoils the appetite, and thus not only ceases to do good, but does positive harm, by preventing the patient from taking as much food as the stomach might otherwise call for and digest"; and at p. 217 I said: "The stomach has often suffered by an attempt to supplement the deficiencies of the small intestines, by digesing an undue amount of albuminoid material; and, by the forced absorption of fluid fats, the portal system has been overloaded and the condition of the liver deranged. Hence it commonly happens that, when cases of early consumption first come under our treatment, all this has to be set right before proper digestion and absorption would be possible, even if the pancreas could be made to resume its functions at once." And I added at p. 249: " Our treatment of consumption only becomes curative in proportion as it includes the means for restoring the healthy functions of the stomach, liver, and pancreas."

We can not doubt then, after what we have seen, that although the liver route may be resorted to in an emergency for the supply of fat to the pulmonary blood, *it can not be permanently depended upon*, and that, in proportion as we force on this overtax of the organ, we entail secondary abnormal conditions which more than counterbalance any good we can obtain.

But still we have not fully demonstrated or explained how it is that fatty liver so often progresses *pari passu* with the wasting of the rest of the body in consumption.

This question has long been a stumbling-block both to physiologists and physicians, but I think that now we shall not find it difficult to answer. It, of course, involves a question which physiologists have not completely settled, viz., the mode and course by which the tissue fat is removed during the process of wasting—whether it is taken up by the lymphatics or by the veins. But there is no longer much room for doubt that the systemic veins are the principal channels by which fat is conveyed from the adipose-tissue cells to the blood, while the lymphatics take up the worn-out tissue of the cells themselves. If the fat were all taken up by the lymphatics, it would be conveyed directly to the lymphatic glands, and thence to the lungs, and none of it could be waylaid by the liver. That which is absorbed by the blood-vessels is conveyed by the venæ cavæ to the lungs, and thus the liver would still be eluded, were it not that, when the supply of fat to the pulmonary blood by the natural lacteal route is cut off or materially diminished, the call upon the adipose tissues for fat is so urgent that the blood becomes surcharged with absorbed tissue fat so long as any can be obtained, and this fat, not having undergone pancreatization or elaboration in the glands, is utilized with difficulty, and therefore passes and repasses through the organism in the general circulation before it is consumed. In this way the arterial blood of the whole system, and therefore that of all the chylopoietic organs, is surcharged with ill elaborated fats; and, as the venous return of all these organs is into the portal system, it is evident that in this way a constant overloading of fat is kept up in the liver cells while all the rest of the organism is losing it by interstitial absorption.

If this were the beginning of the series of morbid phenomena in consumption, we might expect from what we have learned of the elastic character of the function of the liver as an intercepter of the fat, that it might simply become a channel for the passage of absorbed fat to the lungs, as it is capable of becoming for a temporary purpose, when overtaxed with oil from the food (see *ante*, p. 602); but we must remember that, before emaciation begins, the liver functions have been long taxed far beyond their healthy margin; the liver cells have already overflowed with oil and become choked with it, the portal circulation is blocked up, and the secretion of bile prevented or arrested.

But, still more, as the stage of emaciation arrives, in the majority of cases, the digestive organs have been overflooded with fatty and amylaceous foods in attempts to keep up nutrition, by which all the functions of the liver have been overstrained and spoilt; the powers of locomotion have become limited by illness; and, in the necessary protections against colds, the patient has been shut in warm, close rooms; and thus the difficulty of maintaining healthy digestion and assimilation, especially healthy liver action, has been still further complicated. Hence we can not be surprised when Dr. Warburton Begbie says, as the result of his large experience, "the most fatty livers as well as the largest organs which have fallen under my observation have been in cases of chronic phthisis attended by extreme emaciation, in which cod-liver oil, either in large or moderate amount, had been daily consumed for a period of many months." And when we consider that, in the words of Rokitansky, "fatty liver is an essential constituent or pathognomonic combination of the tubercular dyscrasia, inasmuch as *it allies itself with tubercular affections of every kind*, with tubercle of the intestinal mucous membrane, of the bronchial glands, the serous membranes, the bones," we shall see that attempts so often made to explain the connection between fatty liver and phthisis, by referring it to the effect of interrupted oxygenation through the destruction of lung substance, are completely beside the question, even if they were not, *as they are*, easily controverted on other grounds. In fact, we are brought back to the important conclusion so often insisted upon in this work, and for which these phenomena add an argument not previously made use of, viz., that the supply of fat by its natural lacteal route is cut off as the starting-point in the whole series of morbid changes in *constitutional* consumption.*

The fifth item in my list of circumstances which give importance to the liver in connection with loss of weight and lung disease (see *ante*, p. 595) is "its liability to congestion when the pulmonary circulation is obstructed in front, with consequent disturbance of functions; this retrograde congestion and disturbance of function extending in due course to all the organs which contribute to the portal circulation.

This congestion—which is only a part of that wider retrograde venous congestion which, through obstructing the venæ cavæ, extends to the whole venous system—is too well known, in connection with heart and lung diseases generally, to need that I should do more than refer to it here, as a condition which creeps on coincidently with the advancing destruction of lung substance and consequent impediment to the onward current of blood from the right to the left heart, through the pulmonary circulation, leading to certain forms of blood-spitting (see Part II.), and encroaching by slow but certain steps upon the already damaged capability of the digestive and assimilative organs to continue the functions essential to life.

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* It must be always borne in mind that this applies to constitutional consumption. (See pp. 8, 194, 202, in which this distinction is explained.)

Having now fully reviewed the position of the liver as a contingent in the general array of forces with which we have to contend in our battle with "loss of weight, blood-spitting, and lung disease," let us consider what special weapons, or special applications of weapons, are necessary and obtainable for this part of our fight, and with what special aims we are to direct our attack with most promise of success.

If we restrict our view of the liver to its functions as an interceptor of fat for the secretion of bile (see *ante*, p. 602), and to its capability of permitting an overflow of oil into the pulmonary circulation, when this function is arrested or overtaxed, it may not unreasonably occur to us that, under circumstances in which fat is cut off from the organism at the lacteal route, it might be wise to encourage rather than to prevent an arrest or an overtax of the fat-destroying function of the liver, and so to allow the fat to reach the pulmonary blood by the hepatic veins. And I have already pointed out (see *ante*, p. 602) that, in a certain limited sense, this is a wise course to pursue (see pp. 221, 233).

But, when we take a general instead of a restricted view of the subject, we find that the continuance of overtax or arrest of the oil-intercepting function of the liver entails a perversion or arrest of all those other functions which we have found to be so essential to healthy nutrition, and it becomes clear that, even if we could secure a continuance of the passage of the fat to the lungs through the hepatic route, the gain would be more than counterbalanced by what is lost in the arrest of the other functions of the organ. But we have seen that arrest or overtax of the fat-intercepting functions will only for a limited time secure the overflow of oil to the lungs, and that, sooner or later, in most cases very soon, this perversion of function induces a general deadlock.

There can be no doubt, therefore, that we are theoretically right in following the course which practical experience has most unquestionably dictated and justified, viz., *to maintain by every means in our power the full integrity of all the functions of the liver.*

With this end in view, we must cautiously avoid overtaxing the liver beyond a certain point by carefully arranging the distribution of hydro-carbons, carbo-hydrates, and albuminoids in the diet; and, so long as normal pancreatic action is defective, all food should be submitted to artificial pancreatization by the administration of pancreatine, which emulsionizes the fats, and thus assists their passage by the lacteal route instead of through the liver, and assists the conversion of the carbo-hydrates into Bernardin (see *ante*, p. 597). These objects may be still further promoted by submitting some portion of the food to pancreatization in the form of pancreatic emulsion (see Part V.) before it is taken into the stomach, and thus making sure that it is fitted at once for lacteal absorption; and, by the administration of peptodyn (pepsine, pancreatine, and diastase), and of malt extracts, we may still further assist the liver in the conversion of the carbo-hydrates into Bernardin.

This treatment has the additional advantage that the fats which enter the portal system, as well as those absorbed by the lacteals, will have been submitted to the influence of the pancreatic juice.

Having thus eased and saved the defective functions of the liver by these dietetic manœuvres, we must attempt to stimulate the secreting powers when they flag, and to relieve that hepatic congestion which hampers the proper action of the digestive organs. This is best done, without weakening the patient, by giving small, repeated doses of podophyllin or of euonymin; and we must recollect that all our remedies should have a restorative rather than an exhaustive character.

The best way by far of administering podophyllin is to dissolve it in spirits of wine in the proportion of gr. j to the ounce, and combine it with essence of ginger in the proportion of ʒ jss to an ounce; a teaspoonful of this given in a wineglassful of water, every night or every second or third night, will secure all the advantages of podophyllin without any chance of incurring those disadvantages which so often result when it is given in pills (see my note in the "British Medical Journal," May 24, 1879). Euonymin, which is a weak form of podophyllin, may be given in the same way, but the properties and strength of the drug *as at present obtained* are too variable to be relied upon.

One of our most valuable liver medicines is chloride of ammonium. It has proved invaluable in Indian practice in all those cases for which formerly large doses of mercury were thought essential. It is absolutely harmless, and in chest diseases has the additional advantage of being a valuable sedative to catarrhal mucous membranes at the same time that it relieves their congestion and facilitates expectoration. (See my work on Winter Cough, 3d edition, p. 193.) Its action on the liver is especially indicated when congestion is the prominent condition, and it should be given in doses of from 5 to 20 grains, after food, combined either with acids or alkalies according to the special indications of the case in this respect. Benzoate of soda is another hepatic stimulant of considerable value; and ipecacuanha has long been known to be another.

I have pointed out the important action of the liver on nitrogenous matter (see *ante*, p. 597), by which urea is formed and animal heat evolved; and as it is known that one influence of the introduction of chlorides into the organism is to promote the disintegration of albuminoids and materially to increase the excretion of urea by the kidneys, and as we know that the presence of an excess of uric acid in the urine is a sign of a defect in the oxygenation of the waste nitrogenous materials which ought to be disintegrated by the liver: when we find the urine overcharged with uric acid, our first care should be to restore or to increase the disintegrating functions of the liver, and thus to remedy the defect at the fountain-head.

In this way gouty and rheumatic affections and their attendant dyspepsia may be far more permanently treated by the administration of podophyllin, chloride of ammonium, benzoate of soda, ipecacuanha, and the like, than by merely resorting to antidotes for the over-acid condition; *but it is usually advisable to do both.*

I may mention here the powerful influence which I have long found to be possessed by chlorate of potass in removing from the skin those brown and brownish-green discolorations so characteristic of torpid cachectic states, and which are due to the presence in the blood not of bile, but of those waste materials which should be taken from the blood for the formation of biliary and urinary pigments—probably, at least in part, the débris of worn-out blood-corpuscles. When these deposits are present in the skin, the combination of chlorate of potass with the chloride of ammonium has a remarkably satisfactory effect.

It sometimes happens that neither podophyllin nor chloride of ammonium will act with sufficient promptitude for an emergency, and in this case a dose of some mercurial should be given at once, after which it will not be necessary to repeat it if the other remedies are judiciously given and long enough continued.

But in advising means to be used to stimulate the secreting functions of the liver in loss of weight and lung disease, I must emphatically point out that great caution is needed not to overdo this treatment—not to hurry on these functions beyond a normal rate, except for a very limited time—for it has been learned by experiment that over-excitement of the hepatic circulation soon leads to paralysis of function instead of the reverse, sugar being allowed to pass unchanged into the blood in abnormal quantities until temporary or even permanent diabetes results. The connection between tuberculosis and diabetes has been already referred to more than once in this work in other lights, and must not be forgotten.* (See pp. 200, 201, 266.)

Equal caution is necessary that, in our attempts to reëstablish normal liver action, we do not irritate the intestinal mucous membrane, and thus, by hurrying the secretions too rapidly through the alimentary canal, stop that great osmotic circulation between the intestinal contents and the blood, the great importance of which in nutrition I have already impressed. (See *ante*, p. 598.)

The effects of such arrested osmosis into the blood on loss of weight are forcibly illustrated by the rapid and disastrous descent which diarrhœa always produces in a tuberculous patient. (See pp. 151–2.) It ought always to be peremptorily stopped. This may generally be done by giving 20 grains of compound aromatic chalk powder in a wineglassful of brandy and water after each motion; after which an excellent and agreeable way of restoring the tone of the intestines is to administer the "St. Raphael Tannin Wine" as a diet drink for a few days.

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* Some remarkable and permanent recoveries from diabetes have occurred to me under treatment dictated by the facts now in our possession concerning the functions of the liver and pancreas.

I have already called attention to the important influence which the healthy bile exerts upon the lacteal absorption of fats, already emulsionized by the pancreatic juice, in its character as an alkaline fluid saturating the membranous lining of the alimentary tract. This must never be lost sight of in our treatment of derangements of the liver in wasting diseases.

If we have reason to believe that the quantity of alkali thrown into the bowel by the liver is deficient, either from the over-acidity of other secretions or through deficient or defective secretion of bile, we must of course endeavor to rectify this defect by restoring the normal action of the liver; but while waiting for this or in addition to this, we must at once supply the deficient alkali artificially. This will best be done by giving Vals water of the spring "Précieuse" as a drink with meals, combined or not with wine or spirits according to circumstances, and by a powder of soda, calumba, and ginger rapidly mixed in water and taken a quarter of an hour before food. Acid dyspepsia is one of the commonest forms of deranged digestion in consumption, and immense advantage is obtained by correcting this condition. But in doing this care is necessary to combine the alkalies with stomachic tonics so as to restore and maintain the tone of the stomach. It will be found that this is much more satisfactorily done by giving the stomachic tonic in a powder as just directed than in that of infusion or tincture, and I believe this is explained by the simple fact that, when given in infusion or tincture, it is absorbed into the blood at once, and its local effect on the stomach is lost; whereas, when given in a powder just mixed in water the virtues of the drug are gradually given out while in the digestive organs, and its beneficial effect is thus prolonged

However simple such distinctions may appear, it is by attention to them that we secure successful treatment.

The same means of treatment which promotes the normal action of the liver in the disintegration of albuminoids and the assimilation of fats, prove equally advantageous in promoting its all-important *rôle* as the only medium through which the carbo-hydrate constituents of food are made available in the system as sources of heat and mechanical force. (See p. 229, and p. 597, *ante.*) We need not, therefore, recapitulate them, but the fact can not be too forcibly impressed.

If, as there is reason at present to believe, worn-out red blood-corpuscles are disintegrated in the liver, it may partly explain the fact that IRON, which is known to increase the number of red corpuscles in the blood, and therefore the amount of *débris* for disintegration, never agrees when liver action is perverted or arrested. Iron, therefore, is to be avoided in many cases of consumption on these grounds, as well as for those much more vital reasons which I have already pointed out at pp. 130, 234, and which can never be too often repeated.

The disastrous effects of the ill-judged administration of iron in consumption are, I regret to say, constantly coming before me in practice.

We can not review what has been said of the relations between the portal circulation and the pulmonary circulation, and between the systemic blood and the fluids poured out by the liver and other digestive organs in the great osmotic circulation, described on p. 598, *ante*, without recognizing the fact that pulmonary hyperæmia and congestion may be most signally controlled by putting a drain upon the biliary and other intestinal fluids. This is most effectually done, as I have pointed out when speaking of the treatment of hæmoptysis, by saline aperients. (See p. 128.) And these may be well combined when necessary with the special hepatic stimulants already mentioned. But, while calling attention to the value of this treatment, I can not too strongly impress the importance of remembering how *exceedingly powerful are these means of depletion*—second only to blood-letting itself—and hence the necessity for corresponding caution in their employment.

It is evident, from all that has been here said of the functions of the liver and of its disorders, that the greatest care and consideration are necessary to see that, when good is resulting from a certain amount of compensatory overtax of normal liver functions, we are not in too great hurry to interfere; that, when these functions are arrested or perverted, we do not drive them to excess in our endeavors to reinstate them; and that, when we have been called upon to make use of the remedial effects of their temporary over-stimulation, we cautiously and promptly restore them to their normal proportions.

For the purpose of stopping liver action, when this is urgently required, we have a most potent armament in opium, so potent that its power to do harm in this direction should always make us avoid its use in loss of weight and lung disease, except when *its power of stopping the action of the liver* is either peremptorily called for or at the least is certain not to do more harm than good.

On the other hand, if the liver obstinately refuses to answer to our remedies for increasing its functions, or if the passage of its secretions is shut off from the intestinal canal by obstructive diseases, we can do something to supply its place by passing into the bowel fresh ox-gall sufficiently diluted to promote its osmosis into the blood. A quarter of a pint of fresh ox-gall diluted with a pint of water at a sufficient temperature to raise the mixture to 90° Fahr. should be slowly passed into the bowel every day through a long tube connected with a douche reservoir, so that it may enter only by hydrostatic pressure, and may be retained as long as possible in the intestine. To secure this the patient should be kept recumbent on the back, with the hips raised above the level of the chest. Pepsine, pancreatine, and diastase (peptodyn) should be given with the food, to assist the several digestive processes as before directed.

We have, then, ample means at our command for increasing hepatic function, for assisting hepatic function, for supplementing hepatic function, for utilizing excessive, or over-taxed or perverted hepatic function, and for the treatment of disease; and, in proportion as we employ these means with skill and judgment, we may find in the liver a most powerful ally or a dangerous enemy in our wars with Loss of Weight, Blood-spitting, and Lung Disease.*

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* Professor Rutherford ("British Medical Journal") has made elaborate reports of a vast number of experiments to determine the exact action of so-called cholagogues on the biliary secretion of the dog. (But it must always be remembered, in reading his results, that the ways of man are not exactly those of the dog! See p. 67.) They may be thus epitomized: 1. He has found that, in a curarized dog which has fasted eighteen hours, the secretion of bile is tolerably uniform during the first four or five hours after the commencement of the experiment, but falls slightly as a longer period elapses. Its composition is unaltered. 2. Croton oil is an hepatic stimulant of very feeble power. 3. Podophyllin is a very powerful stimulant of the liver. During the increased secretion of bile the percentage amount of the special bile solids is not diminished. If the dose be too large, the secretion of the bile is not increased. It is a powerful intestinal irritant. 4. Aloes is a powerful hepatic stimulant. It renders the bile more watery, but at the same time increases the excretion of biliary matter by the liver. 5. Rhubarb is a certain though not a powerful hepatic stimulant. The bile secreted under its influence has the normal composition. 6. Senna is an hepatic stimulant of very feeble power. It renders the bile more watery. 7. Colchicum increases to a considerable extent the amount of biliary matter excreted by the liver, although it renders the bile more watery. 8. Taraxacum is a very feeble hepatic stimulant. 9. Scammony is a feeble hepatic stimulant. 10. Gamboge is an intestinal but not an hepatic stimulant. 11. Castor-oil stimulates the intestinal glands but not the liver. 12. Calomel has no power to increase the biliary secretion, but stimulates the intestinal glands. 13. Euonymin is a powerful hepatic stimulant. It is not nearly so powerful an irritant of the intestine as podophyllin. 14. Sanguinarin is a powerful hepatic stimulant. It also stimulates the intestines, but not nearly so powerfully as podophyllin. 15. Iridin is a powerful hepatic stimulant. It stimulates the intestines less powerfully than podophyllin. 16. Leptandrin is an hepatic stimulant of moderate power. It is also a feeble intestinal stimulant. 17. Ipecacuanha is a powerful hepatic stimulant. It increases slightly the secretion of intestinal mucus, but has no other apparent stimulant effect on the intestine. The bile secreted under the influence of ipecacuanha has the normal composition. 18. Colocynth is a powerful hepatic as well as intestinal stimulant. It renders bile more watery, but increases the secretion of biliary matter. 19. Jalap is a powerful hepatic as well as intestinal stimulant. 20. Sodium sulphate is an hepatic stimulant of considerable power. It also stimulates the intestinal glands. 21. Magnesium sulphate is an intestinal but not an hepatic stimulant. 22. Potassium sulphate is an hepatic and intestinal stimulant of considerable power. Its action on the liver is, however, uncertain, probably owing to its sparing solubility. 23. Sodium phosphate is a powerful hepatic and a moderately powerful intestinal

ART. III.—*The Inhibitory Fibers in the Spinal Cord.* By ISAAC OTT, A. M., M. D., and ROBERT MEADE SMITH, A. M., M. D., Demonstrator of Experimental Physiology, University of Pennsylvania.

IN another place we have put forth the theory that, after hemisection of the spinal cord, the hyperæsthesia behind the section is due to the division of inhibitory fibers running on that side. As the subject of inhibitory fibers is rather new, perhaps a few words of explanation will not be out of

stimulant. 24. Rochelle salt is a feeble hepatic but a powerful intestinal stimulant. 25. Ammonium chloride stimulates the intestinal glands but not the liver. 26. Dilute nitro-hydrochloric acid is an hepatic stimulant of considerable power. 27. Corrosive sublimate is a powerful hepatic stimulant, while it is a feeble intestinal stimulant. 28. Calabar bean stimulates the liver, but powerfully only in large doses. 29. Atropia sulphate antagonizes the effect of Calabar bean on the liver, and thereby reduces the hypersecretion of bile produced by that substance. It does not, however, arrest the secretion of bile, and when given alone does not notably affect it. 30. Menispermin does not stimulate the liver. It slightly stimulates the intestinal glands. 31. Baptistin is an hepatic and also intestinal stimulant of considerable power. 32. Phytolaccin is an hepatic stimulant of considerable power. It also slightly stimulates the intestinal glands. 33. Acetate of lead in large doses somewhat diminishes the secretion of bile, probably by a direct action on the liver. 34. Ammonium phosphate is a moderately powerful stimulant of the liver. It does not stimulate the intestinal glands. 35. Tannic acid does not affect the secretion of bile. 36. Hydrastin is a moderately powerful hepatic stimulant and a feeble intestinal stimulant. 37. Juglandin is a moderately powerful hepatic and mild intestinal stimulant. 38. Sodium benzoate is a powerful hepatic stimulant. It is not an intestinal stimulant. 39. Ammonium benzoate stimulates the liver, but not quite so powerfully as the sodium salt of benzoic acid. It does not stimulate the intestinal glands. 40. Benzoic acid stimulates the liver, but owing to its insolubility its action is less rapid and much less powerful than that of its alkaline salts. 41. Sodium salicylate is a very powerful hepatic stimulant. It does not notably stimulate the intestinal glands. 42. Sodium chloride is a very feeble hepatic stimulant. 43. Sodium bicarbonate has scarcely any appreciable effect as an hepatic stimulant, even when given in large doses. 44. Potassium bicarbonate feebly excites the liver, and that only when given in very large doses. 45. Potassium iodide has no notable effect on the biliary secretion. 46. Sulphate of manganese does not excite the liver, though it is a powerful excitant of the intestinal glands. 47. Hyoscyamus does not notably affect the biliary secretion, and does not interfere with the stimulating effect of place. It was first noted by Gluge, after an injury to the spinal cord of the rabbit, that rhythmical movements ensued in the sphincter ani. Afterward Goltz observed the same phenomenon in the dog. Gowers* also saw in man, after an injury weakening the ano-spinal center, rhythmical movements of the sphincter ani. One† of us found that the inhibitory fibers run in the lateral columns of the spinal cord of the cat. Now, after division of both lateral columns, rhythm of the sphincter ani and sphincter vaginæ was found to take place. This rhythm occurred as long as transverse sections were made behind the optic thalamus. We have also proved in another paper that, like the motor fibers, the inhibitory decussate a little below the nib of the calamus scriptorius. To more accurately localize these inhibitory fibers in the lateral columns is our object.

Method.—Full-grown cats were selected for these experiments, as the rhythm does not appear readily in young ones. The sections of the spinal cord were made at the junction of the lumbar and dorsal vertebræ. The animals were etherized and bound down, when tracheotomy was performed. The spinal column was elevated by means of a block of wood placed under the abdomen. Then the skin, fascia, and muscles on each side of the spinous processes were laid bare, and the tissues held apart by weighted hooks. The spinous processes of the vertebræ were snipped off with a sharp bone-forceps. A small trephine was applied to the body of the vertebræ, and through the trephined opening a blade of the bone-forceps was introduced. By this means the spinal canal was laid open, and the spinal cord enveloped in its membranes laid bare. The spinal dura mater was divided by means of a forceps and sharp knife. The columns of the cord were divided either by

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such a substance as sodium salicylate. 48. Pure diluted alcohol does not affect the biliary secretions. 49. Jaborandi is a very feeble hepatic stimulant. 50. Morphia has no appreciable effect on the secretion of bile (every practical physician knows that morphia has a decided effect in stopping the secretion of bile in man!), and does not prevent the stimulating effect of such a substance as sodium salicylate.

* "Proceedings of Royal Society," vol. xxvi., No. 179.

† "Journal of Physiology," vol. ii., No. 1.

free-hand section or Woroschiloff's instrument, which had been previously fastened to the vertebræ. The hemorrhage was controlled by absorbent cotton and artificial respiration. After the section was made the tissues were brought together by stitches, and the animal placed in a warm room to recover.

Fig. 1.

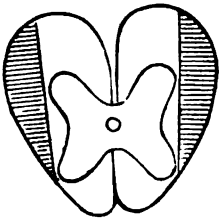


Fig. 2.

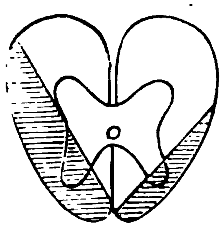


Fig. 3.

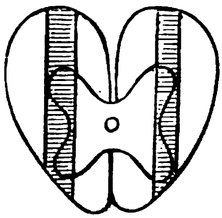


Fig. 4.

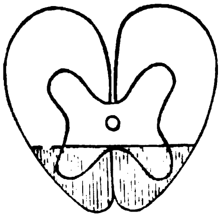


Fig. 5.

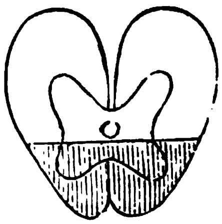
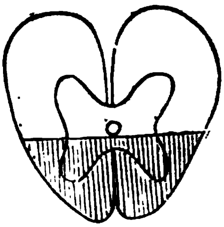


Fig. 6.



After a few hours the rhythm was noted. When the cord was divided as in Fig. 1, then the rhythm of the sphincter was seen to take place, accompanied with hyperæsthesia of the parts on the side of section. If the cord was divided as in Fig. 2, then no rhythm was seen to take place. If, however, the section was made as in Fig. 3, then a rhythm ensued. These sections of the cord demonstrate that the inhibitory fibers run in the inner half of the lateral column. The next question is to determine whether it is the anterior, middle, or posterior third of the lateral column. If a section is made as in Fig. 4, then no rhythm is seen to happen. If a section is made as in Fig. 5, then no rhythm is seen, but hyperæsthesia and a great inclination to rhythmic movement occur. If a section is made as in Fig. 6, then a well-marked rhythm is present, accompanied by hyperæsthesia. Now, when we look upon the lateral columns as divided into thirds from above downward and from the gray matter outward into halves, it will be found that the inhibitory fibers not only run in the lateral columns but in the inner half of the middle third of them. And when this place is divided a rhythm ensues, accompanied with hyperæsthesia. Now, Woroschiloff has shown that in the rabbit the fibers of hyperæsthesia run in the inner half of the middle third of the lateral columns. While we have made no direct experiments to determine the path of the fibers of hyperæsthesia in the columns of the cat, yet it is to be noted that, when we procured a rhythm, it was accompanied by an hyperæsthesia in the parts behind the section. These experiments give additional support to our view that the fibers of hyperæsthesia are inhibitory fibers.

ART. IV.—*A New Group of Nerve-Cells in the Spinal Cord of the Frog (Rana pipiens and Rana halecina).* BY JOHN J. MASON, M. D.

IN the posterior (inferior) portion of the brachial enlargement, quite near the third and fourth pairs of spinal nerves, I find a distinct mass of ganglion cells, the nuclei of which measure in rana pipiens about :0125–:015 m.m., and are more nearly spherical than those of the larger cells of the (anterior) inferior horns, or than those of the smallest cells. This fact in regard to the form of the nuclei can be seen in fresh preparations. 'Anteriorly in longitudinal sections, this mass or column extends, at least in this species (rana pipiens), as far as a plane about three millimeters behind the large brachial nerve roots. The group appears to be a numerous one, and in transverse sections, where it is seen lying near the outer margin of the gray substance, just above the superior border of the central canal; often twelve and sometimes twenty nuclei can be counted. No similar group exists in the spinal cord of rana pipiens, if we except a small one of from three to five cells, seen in transverse sections of the middle portion of the conus medullaris. The location of this group observed both in longitudinal and transverse sections, and the medium size of the nuclei contained in the ganglionic bodies composing it, are two constant characteristics which I have established beyond doubt by the use of sufficient time and material. Karabanowitsch* divides the nerve-cells of the frog's spinal cord into three classes: the largest, the medium-sized, and the smallest cells, basing his division upon measurements of nuclei. His "sensitive cells," or those of the second category, had nuclei measuring :015 m.m., and were therefore taken from the group above described, although the existence of the latter seems to have escaped his notice. He noticed (and his researches were made on comparatively fresh preparations) that the protoplasmic material or cell wall, so called, is less highly colored by carmine than is that of the large inferior (anterior) horn cells. I am able to confirm this observation, but can not agree with him in regarding them as embryonic structures. Reissner† makes two classes only, large and small cells, and refers to none of medium size, nor did he notice or figure any such group as that which I have described.

He noted fully the separation into two groups which occurs just below the second pair of nerves, but here the superior (posterior) group lies in cross-sections below the level of the central canal, and is composed of cells with large nuclei; whereas that which furnishes the subject of this article lies above the superior margin of the canal, and consists of cells with medium-sized nuclei, as before stated. Wyman,‡ on the "Nervous System of Rana Pipiens," found but one distinct group: those of the inferior (anterior) horns, which are repeatedly called posterior horns, although the accompanying cut makes his meaning plain.

Have we here to do with the homologue of Clarke's columns? Gerlach, on the nerve cells of the human spinal cord, in Stricker's "Hand-Book" (translation) states, on page 635: "The largest cells are found in the anterior, the smallest in the posterior horns, and those of medium diameter in that region of the spinal cord lying to the side and a little back of the central canal—the columns of Clarke." The group, then, which we are here considering corresponds, in all points except the extent of space which it occupies antero-posteriorly, with the cells of the lateral columns. The reader is referred to the "Anatomical Hand-Book" of Henle for a careful *résumé* of the work of Clarke and Stilling, and for much original text, with plates on the lateral tracts of the spinal cord, bearing in mind that, as before stated, in the posterior (lower) portion of the lumbar region, a trace of this group is also found in the frog.

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* "Ueber den Bau des Rückenmarkes vom Frosche." St. Petersburg. 1872.

† "Der Bau des centralen Nervensystemes der ungeschwänzten Batrachier." Dorpat, 1864.

‡ Published by Smithsonian Institution, Washington, 1853, vid. pp. 19, 20.

Clinical Records from Private and Hospital Practice.

I.—*Case of Spurious Pregnancy.* By J. S. Conkey, Canton, N. Y.

Mrs. H. is thirty-four years old, has been married about fifteen years, and has never had children. She has menstruated regularly, though much of the time her monthly periods have been attended with a great deal of pain. She has been from her youth up tolerably healthy, but has had rheumatic troubles at various times, it being a family characteristic. She came under my special care somewhat over three years ago, since which time she has been under my constant observation and treatment. I think in April, 1876, I was called to see her, when she supposed herself some two or three months along in pregnancy. The breasts were enlarged and tender, areola about the nipple dark, abdomen enlarged somewhat, menses not wholly suppressed, but irregular and scanty. I saw her again not long after, and found her size increasing; I made a digital examination, and found the neck of the uterus shortened and having the appearance of a uterus at about the fifth month. Added to these symptoms was the sensation the patient experienced of feeling motion. Under all these circumstances I could but conclude her *hopes* were well founded, and expressed to her my belief that she was *enceinte*. These symptoms increased till she considered herself at the full period of gestation. At this time she was taken with violent pains in the back and extending through the pelvic region. These pains were paroxysmal, at intervals of from five to ten minutes. On making an examination, I found the neck wholly obliterated, and the uterus hard and very tender to the touch, feeling somewhat uneven or nodulated. The pains, I found, though severe, were not expulsive in their character. I was not a little puzzled to account for this state of things, on the ground that she was on the eve of confinement. Administered an opiate, and retired for deliberation. I saw her the next day; the pains had returned; and again I made a careful examination, and came to the conclusion that her symptoms arose from other causes than pregnancy. There was evidently a morbid growth or enlargement of the uterus, and probably of the left ovary; but what was the nature of it was the question. I called every physician of standing within my reach, and found them as much at a loss to account for her symptoms as I was. I suggested to them the idea that it might be tubular or extra-uterine pregnancy. Some fell in with the idea, and others hesitated to express an opinion. Of one thing I was convinced; and that was, that there was a morbid growth there, and that possibly it might be reached and got rid of by remedies that would promote absorption. Accordingly, she was put upon iod. potass. with comp. syr. sarsaparilla as an internal remedy, while a saturated tr. iodine was used externally. This course was persevered in till her system was thoroughly saturated with the drug, so to speak, and I had the satisfaction to know that her size began to decrease. The tenderness left the breasts, and they, too, diminished in size. In the mean time she took iron in various forms as a tonic, iron and quinine, iron by hydrogen, tr. iron with dil. phosphoric acid, iron and nux vomica, etc. Iron formed the basis of most of her tonics, though occasionally I substituted some of the vegetable tonics for a time. Though the size decreased slowly, the left iliac region was very painful, and excessively tender to the touch. Following these symptoms was fluctuation, extending over the whole abdomen. In time this, too, began to diminish, growing gradually less till it, too, partially disappeared. In the winter and spring of 1878, she mended quite rapidly, began to get out, and during the summer was quite comfortable and able to be about town and attend to her household duties, though her size had not wholly returned to its normal condition. In the latter part of August or the first of September she was taken with a severe pain in the left groin, extending to the hip and down the leg to her foot. From the character and location of the pain, I did not doubt that this new development was simply and purely sciatica. Under the use of alteratives the pain, enlargement, and tenderness of the abdomen generally diminished till her form became natural; and the old trouble of the uterus and its appendages seemed quite well, save, as she expressed it, "a sensation of weakness" was experienced in that region. But while these changes were going on the sciatica held its own, and, if anything, increased, causing her extreme suffering about the hip-joint and along the track of the sciatic nerve. Counter-irritants by blisters and cups were used as occasion seemed to demand, and tonics were diligently administered, consisting principally of quiniæ sulphas and iron, mostly pyrophosphate. During the summer several carbuncles (small ones) appeared about the hip and along the thigh as far as the knee. At times there seemed to be as much suffering from the knee-joint as from the hip. These sores were very painful, but did not discharge much, though one upon the nates discharged quite freely. I should have mentioned, in its proper place, that, during the time in which she was taking alteratives, mercurials made part of her treatment, though they were never pushed to the point of producing ptyalism. She has been slowly mending in her general health and strength since about the first of last August, and for some little time before her going to the Woman's Hospital was able to sit up a portion of the time, and occasionally to ride out, though unable to put her left foot to the ground. Electricity was used upon the affected side during the past summer with apparent good effect.

II.—*A Case of a "Recurring Fibroid" or Myxo-Sarcomatous Tumor of the Back, upon which Twelve Operations were performed during Thirty-Nine Years. Death and Autopsy.* By JAMES S. GREEN, M. D., Elizabeth, New Jersey.

THE history of this interesting case is given in the language of patient, contained in a letter sent me previously to the last operation to which he submitted, and which was performed by me about four months before his death.

"J. G. was born in Colebrook, Connecticut, August 29, 1822, being the son of a farmer. He was early accustomed to labor, and while yet a boy was regarded as remarkably strong and efficient. When about sixteen years old, while growing rapidly, he was conscious of an uneasy sensation in the upper part of the back. This uneasiness was especially noticed in the morning, and became less after becoming active. Several months passed, when a tumor of considerable size and prominence was discovered (in the upper portion of the dorsal region) in June, 1839. In October of the same year this tumor was removed by Dr. Knight, of New Haven. It was styled at the time a fatty tumor. It was located deep under all the muscles except the longissimus dorsi. The principal body of the tumor weighed eight ounces.

"Subsequently it became apparent that the tumor had not been all removed. It recurred very soon in the same location, and was connected with a like growth on the opposite side of the spine by a part passing between two spinous processes. This complex tumor was removed by Dr. Knight, in December, 1840. Weight, eighteen ounces.

"Thus far no paralysis or special nervous disturbance was observed.

"In the spring of 1845, however, a slight sensation of numbness of the feet and knees was obvious, with a tendency to stumble at slight obstacles. This gradually extended and increased till, in December, 1845, Mr. G. found himself unable to pursue any occupation; and about the same time it was found that the tumor had recurred.

"It rapidly developed on both sides of the spine. For a whole year, endeavors were directed to relieve the paralysis in the belief that it must have some cause other than the existing tumor.

"In February, 1847, a contrary opinion having been reached, the tumor (now very large and extending six to eight inches on each side along the spine) was removed by Dr. Knight. It was a formidable and tedious operation of over an hour, and *the first* (which was performed in New Haven) *in which ether was administered.*

"A very discouraging feature of the case, when the operation was nearly over, was the discovery of a spinous process denuded and probably dead. Recovery seemed impossible under such circumstances, yet in three weeks all was healed, and the paralysis almost entirely relieved. No one who had not a knowledge of the facts would have suspected any disability of any kind. But the tumor, with paralysis accompanying it, recurred, and was removed again and again. Dr. Knight performed the next operation in December, 1848, the next in June, 1854. Dr. Gurdon Buck operated next (Dr. Knight being present), in April, 1856. It was an operation attended with certain accidental circumstances unfavorable to recovery, and for several months recovery seemed doubtful.

"Again, in 1860, Dr. Knight performed an operation, in July, and a second one on the other side of the spine in August. Dr. Knight died in 1864.

"Dr. Dougherty, of Newark, N. J., performed an operation (not fully successful in relieving the partial paralysis) in January, 1867, and again in July of the same year another operation, with better result. The disability was greatly relieved, and when it recurred it was of very slow progress, and the location of the tumor could with difficulty be determined. Such, however, became the necessity of relief at length that an operation was performed by Dr. Green, of Elizabeth, in February, 1878, the results of which, though not all that were hoped, are obvious in decided relief of paralysis and encouragement for the future. It will be observed that, of the eleven operations here indicated, the first two preceded the discovery of anæsthetics."

This is the text of the patient's account of his case some three weeks after my first operation upon him. Mr. G. was brought to me by Drs. Mravlag, of Elizabeth, N. J., being their personal friend, and also after operation had been denied him by two distinguished surgeons of New York city. So impressed was the patient that an operation would relieve him, and so earnest was his importunity, that I was induced to attempt the first operation on the 11th of February, 1878.

At my first examination of Mr. G., I found him apparently in excellent health, and, as he sat upon his chair, in better physical and mental condition than most men of his years. When he moved across the floor there were a decided hesitancy in his gait and a tendency to stumble at small obstacles in his way. He complained of an increasing numbness in his lower extremities, and was suffering from nervous irritability, in part owing to the fact that the surgeons of New York city had refused to attempt the operation, which he believed would certainly relieve his paralysis. Upon removing the clothing, the skin of his back on either side of the spinous processes, from the first to the eighth dorsal vertebra, was covered with the scars of the ten previous operations. The tissues occupying the spaces between the spinous processes and the angles of the ribs were not so prominent as the general development of the chest would warrant; but no prominence or appearance of a tumor was perceptible either to the touch or vision. Upon pressure on a part lying near the spinous processes of the second and third dorsal vertebræ and on the left side, a temporary, increasing numbness of the lower extremities was produced. The patient having been anæsthetized with ether, and placed in the Sims position on the table, on the 11th of February, 1878, assisted by Drs. Mravlag and Alonzo Pettit, in the presence of Dr. A. N. Dougherty, of Newark, N. J., and Drs. G. Grant and Young, of New York city, I commenced my first operation. An incision six inches in length, commencing from the second dorsal vertebra and an inch to the left of the spinous process, was made. Going down through all the integuments until the space between the semi-spinalis dorsi and semi-spinalis colli muscles was reached, a white, pearly-colored mass was found, and upon opening the sac a rounded white body was turned out with the handle of the scalpel, which originated between the laminæ of the second and third dorsal vertebræ. This was removed with care, and as deeply and thoroughly as it was deemed safe to attempt. Two or three smaller masses of the same character were removed from the spaces between the laminæ of the vertebræ below. Sliding the skin across the spinous processes, the corresponding spaces on the right side were examined, but no traces of the abnormal growth were found, although the denuded spinous process, which was rough and apparently necrotic, was found, as it had been discovered by Dr. Knight in February, 1847—a fact which, at the time of my operation, was unknown to me. The wound was closed with four wire sutures, and a small drainage-tube was placed in its lower part.

The patient made an excellent recovery as far as the operation was concerned, and the wound was entirely healed in about ten days. Although decided relief to the paralysis was given by the operation, the results, as the patient himself writes, "were not all that were hoped" by him; and again, at the earnest request of Mr. G., I performed my second operation (the twelfth of the series), on the 12th of May, 1878. I was assisted by the same surgeons as at the first operation. It was performed in the same locality, but the incisions were made on either side of the spinous processes, and at a distance of an inch and a half from them. This operation was more thorough, and the spaces between the laminæ more deeply and carefully explored. The amount of the tumor found was less than at the previous operation.

The recovery from the wounds of this operation was rapid, as in the former one, but the paralysis was not at all relieved. Mr. G. then returned to Newark, N. J., and passed from my observation, and in the month of July, 1878, two months later, died, after a sudden illness of thirty-six hours. Dr. A. N. Dougherty, who had performed two of the operations, and who attended Mr. G. in his last illness, writes me as follows:

"In answer to yours inquiring the particulars of Mr. J. G.'s case, so far as I was acquainted with them, I would report as follows: I operated on Mr. G. twice, at a short interval, not long after my return from the army, and, I think, in the year 1866. In neither case did I do more than remove some small portions of a soft growth, having its origin apparently in the interior of the spinal column. I was informed that when Dr. Buck operated he had opened (of course unintentionally) the pleural cavity, and on that occasion the patient came near succumbing; and I, of course, did not intend to meet with such a mishap.

"After these operations, especially the second, Mr. G. thought himself considerably relieved; but at length, his numbness increasing, he solicited a third operation, which I agreed to undertake, but with little hope of benefit or certainly not of cure. I was present at your first operation, and felt a cavity between the vertebræ, through which the tumor seemed to pass to some unknown spot within, and which we all agreed it would be best not to trace farther.

"As to his last illness, it occurred in this wise: A couple of months or so after your second operation, I was called to see him, suffering from extreme pain and dyspnœa, which I interpreted to be due to pleuritis connected with the encroachments of the growth. Notwithstanding treatment, he grew gradually worse, and died within thirty-six hours.

"The *post mortem* showed pleuritic effusion, and a tumor (myxo-myoma, I believe) was found, but slightly if at all prominent, on the back, but passing through to the pleural cavity, having its origin apparently in the interior of the spinal canal, and being developed to the size of a double fist in the pleural cavity."

I was not able to assist at the *post mortem* of Mr. G., but Dr. Victor Mravlag, of Elizabeth, who was present, gives me the following account of his view of the autopsy:

"Upon opening the thorax, the left pleural cavity appeared filled with a partially coagulated mass of blood, presenting the appearance that a large aneurism had burst into the same. After cleaning out the pleural cavity of this sanguineous mass, the lung appeared compressed from above downward and forward, containing air in all parts and healthy in structure except at the posterior and upper portion, where it was pressed upon by the encroaching tumor. At this point it was adherent to the inner wall of the thorax, and its structure broken down; and it was from this part that the hæmorrhage which was discovered occurred; at this part the tumor was partially fastened by adhesions to both walls of the pleural cavity and the structure of the lung. The mass of the tumor was situated in the posterior mediastinum, and was at least seventeen inches in circumference, and weighed about a pound and a half. The color and structure were the same as those removed at the two last operations, which were declared to be myxo-sarcoma by Dr. C. Heitzman and Dr. James B. Hunter, of New York city. The large mass in the thorax was continuous, with a smaller one passing through between the second and third ribs on the left side to the corresponding intervertebral foramen, and through the same to the interior of the spinal canal, in which place the myxo-sarcoma was about the size of a small cherry, loosely attached to the dura mater. The meninges of that portion of the spinal cord were thickened and opaque. The second and third dorsal vertebræ were roughened and partly absorbed near the intervertebral foramen by the pressure of the tumor."

The dates and particulars of the several operations are given in the following table:

DATE OF OPERATION.	Operator.	Anæsthetic used.	Result of Operation.	Remarks.
October, 1839...	Dr. Knight, New Haven.	None.	Rapid recovery from operation.	At this time no paralysis.
December. 1839.	" "	None.	" "	" " "
February, 1847..	" "	Ether.	" "	Paralysis having intervened, almost entirely relieved by operation.
December, 1848.	" "	"	" "	Paralysis relieved.
June, 1854......	" "	"	" "	" "
April, 1856.....	Dr. G. Buck, New York.	"	Recovery complicated by pleuritis.	Paralysis partially relieved.
July, 1860......	Dr. Knight, New Haven.	"	Rapid recovery.	" "
August, 1860...	" "	"	" "	Paralysis decidedly relieved.
January, 1867...	Dr. Dougherty, Newark, N. J.	"	" "	Partial relief.
July, 1867......	" "	"	" "	Decided relief.
February, 1878.	Dr. Green, Elizabeth, N. J.	"	" "	Partial relief.
May, 1878......	" "	"	" "	No relief.

Remarks.—In review of the history of this case, it will be observed that the numbness and partial paralysis of the lower limbs did not occur until after the second operation, and nearly five years after the tumor was first noticed. It is, therefore, probable that the growth first was developed in the tissues of the back, and it was not until after the second operation that the disease progressed into the space formed by the pedicles of the second and third dorsal vertebræ. It is also evident that the affection had pushed its way into the posterior mediastinum in 1856, seventeen years from the date of the first operation, as at that time the operation was complicated by an inflammation caused by a wound of the pleura.

The paralysis of motion which induced the patient to insist upon the frequent repetition of the operation was in every instance, except one, relieved by removal of the growth from the intervertebral foramen. The case is unique as regards the length of time in which the patient was afflicted and the number of operations to which he submitted for relief. Sir James Paget, in vol. ii., p. 155, "Lectures on Surgical Pathology," describes a number of similar cases under the title of "Recurring Fibroid Tumors," in which four, five, and six operations were performed before the patient's health succumbed.

Proceedings of Societies.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Third Annual Meeting in New York, August 26, 27, 28, 1879.

The Association met at Park Avenue Hotel, Dr. L. A. Duhring, President, in the chair. There were fourteen members present.

The opening address by the President was published in full in this Journal for November. Papers were read by Dr. I. E. Atkinson on "A Case of Incomplete Vitiligo"; by Dr. J. Nevins Hyde on "The Bulbous Eruption induced by Ingestion of Iodide of Potassium." Dr. Hyde discussed the occasional intermingling of the syphilitic and potash eruptions.

Dr. Fox read a paper on "The Treatment of Eczema by the Elastic Tubular Bandage," recommending the method highly for its cheapness and simplicity. Dr. Heitzmann presented some new views on inflammation of the skin. The value of *Viola tricolor* in eczema of the head and face was discussed by Dr. H. G. Piffard. Further papers were presented by Dr. Van Harlingen on "A hitherto undescribed Vesiculo-pustular Disease of the Skin"; by Dr. S. Sherwell on "Tattooing of Nævi," reporting cases of cure; by Dr. Hardaway on "A Case of Multiple Tumors of the Skin, accompanied by Intense Pruritis"; by Dr. Duhring on "A Case of Inflammatory Fungoid Neoplasm." A paper that excited much animated discussion was read by Dr. White, on the "Etiology of Skin Diseases." Dr. White took strong grounds in favor of the local origin of skin diseases.

Another interesting paper was presented by Dr. R. W. Taylor on "The Nature of Syphilis," in which he asserted it to be a disease of the connective tissues, and that the poison existed in microscopic granules of protoplasm, which are the specific cells of the disease.

At the business meeting Dr. Duhring was reëlected president; Dr. Van Harlingen, of Philadelphia, was chosen secretary. The Association adjourned to meet at Newport, August, 1880.

THERAPEUTICAL SOCIETY OF NEW YORK.

The second annual meeting was held October 17, 1879. The following officers were elected for the ensuing year: President, Dr. A. Jacobi; First Vice-President, Dr. R. F. Weir; Second Vice-President, Dr. Mary Putnam Jacobi; Recording Secretary, Dr. Andrew H. Smith; Corresponding Secretary and Treasurer, Dr. E. C. Seguin; Councilors, Dr. H. T. Hanks and V. P. Gibney.

A discussion upon the advisability of increasing the membership resulted in the passage of the following resolution;

Resolved, That it is the sense of this meeting that the by-law restricting the number of members to forty should be amended by striking out the word "forty" and inserting the word "sixty" in its place; and it is recommended that the

Council take the necessary steps to have such change made at the next annual meeting.

It was also the sense of the meeting that the resolution passed December 14, 1877, should be strictly carried out, except in cases in which a member is prevented temporarily by a special cause from taking part in the Society's work. The resolution is as follows:

Resolved, That, at each annual meeting, those members who shall have attended no meetings, nor taken any part in the work of the Society during the preceding year, shall be dropped from the roll.

Three members who came within the scope of this resolution were dropped accordingly, and the Secretary was directed to notify them of the action of the Society.

On discussion, it was deemed inexpedient to change the times or manner of holding meetings, but it was held that the Council might provide for occupying, with short papers, discussions, etc., such meetings as may not be appropriated to the presentation of reports.

THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, November 4, 1879.

Dr. WILLIAM T. LUSK, President, in the chair.

Ovarian Cyst — Simple — of Eleven Years' Standing. — Dr. CHARLES C. LEE presented a simple ovarian cyst, which he removed from a woman aged thirty-four, married but sterile, in good general health, and a patient in the Woman's Hospital. The cyst had existed nearly eleven years. At first it grew so rapidly that, from a slender waist, the abdomen, within two years, attained a circumference of forty-one inches. He made a diagnosis about one year ago of simple ovarian cyst without adhesions. About one month ago, for the first time, she suffered sufficient inconvenience from the tumor to induce her to submit to an operation, which was performed without difficulty. There was no adhesion, although there had been, presumably, two attacks of peritonitis; the pedicle was so short that it could not be secured safely with ligatures, and, therefore, was clamped, and the patient was doing well.

Dr. C. S. WARD referred to two cases in which Dr. Thomas had operated and removed simple cysts without adhesions, that had had a duration of ten and seven years respectively.

Lungs from Children who died of Empyema.—Dr. REYNOLDS presented two lungs which were removed from children four and five months old who died of empyema. In one the diagnosis of pneumonia was made, and in the other pleurisy was diagnosticated. In both cases the children, apparently healthy and in good condition, were taken sick and died within three days. In both lungs were abscesses varying in size up to a small cherry, some of which had ruptured. Air escaped from an opening on the surface when one lung was inflated, but no air escaped when the other was filled. He also referred to four cases of empyema occurring in children within the last six weeks; and to a case of acute pleurisy which terminated fatally within twenty-four hours.

Instrument for cutting Deep Sutures.—Dr. BACHE EMMET exhibited a pair of scissors, to the end of one blade of which was attached a section of a cylinder that facilitated the removal of sutures buried deep in the tissues, as after operation for ruptured perinæum.

Fibro-Cystic Tumor of the Broad Ligament.—Dr. FORDYCE BARKER presented a fibro-cystic tumor of the broad ligament which weighed thirty-two pounds, and was obtained *post mortem* from a case that had the following history. In October, 1864, the patient, then aged forty-five, first consulted him, when he found a large abdominal tumor with irregular surface, which on account of its size gave her great inconvenience and pain. She had suffered severely from metrorrhagia, and had lost large quantities of blood. In 1869 Dr. Van Buren operated upon her for hæmorrhoids, and discovered an abdominal tumor which he thought might be the cause of them. Soon after, she consulted Drs. Atlee, of Philadelphia, and Peaslee, of New York, and subsequently was under the treatment of a homœopathic practitioner for two or three years, chiefly for the metrorrhagia. When Dr. Barker first saw the case the patient's abdomen measured forty-four inches in circumference, contained a tumor that moved with the uterus which was four inches deep, and which he diagnosticated to be a fibroid of the uterus, the same diagnosis which had been made by Drs. Atlee and Peaslee. The chief symptom was then metrorrhagia, which was controlled by local application to the inner surface of the uterus of sulphate of zinc and glycerine. From 1876 to 1878 menstruation was quite regular, and then ceased entirely, and the measurement of the uterus diminished to two and a half inches.

In November, 1876, he began the ergot treatment for the tumor, and the abdomen, from measuring fifty-three inches in circumference, diminished in size so that, in March, 1877, it measured only forty-four inches. She then had a severe attack of local peritonitis, which he suspected was produced by the ergot. The drug, however, was continued from time to time, but finally, as the tumor ceased to diminish in size, it was discontinued entirely. The tumor gave the patient excessive discomfort; she suffered from three or four violent attacks of local peritonitis, latterly she rapidly emaciated, had severe gastric disturbance, bed-sores, phlegmasia dolens, and finally died in October last of asthenia, due to septicæmia and general exhaustion. The autopsy was made by Dr. Griswold, and showed an entire error in diagnosis; for there was found not a fibrous tumor of the uterus, but a fibro-cystic tumor of the broad ligament. It contained a cyst that held six pounds of material, which consisted of granular matter and a large proportion of red blood-globules suspended in a fluid that had the appearance and color of pea-soup. Dr. Barker further remarked that at no time did he obtain fluctuation until last spring, and then only indistinctly. He desired to know how such a mistake could be avoided, and whether the tumor could have been removed.

Dr. CHARLES C. LEE remarked that he had not seen a true fibro-cyst of the ovary. If the specimen presented proved to be one, it was almost unique. He thought the diagnosis, when the sound enters the uterus only a moderate distance, is exceedingly difficult, and also, that there was no point in the history of the case which would lead to any diagnosis other than that which was made, except perhaps that it was a sarcoma. He doubted the possibility of its removal.

The PRESIDENT spoke of the difficulty of diagnosis in certain cases, and referred to the specimen presented as an instance in which the uterus was not discovered to be upon the side of the mass removed until the day following the operation. He also referred to a second case in which a positive diagnosis of fibro-cystic tumor of the ovary was made by Dr. Peaslee and himself, but it proved to be a large abscess.

Dr. JANVRIN referred to a case in which diagnosis was made by Drs. Emmet, Peaslee, and Brown, of ovarian tumor, but which proved to be a fibro-cystic tumor of the uterus connected by a pedicle about one inch and a half in length and an inch in thickness.

Dr. JOHN BYRNE mentioned a case in which a tumor was diagnosticated by Drs. Brown and Noeggerath to be ovarian, but it proved to be a fibro-cystic tumor of the uterus, with the fundus for a pedicle.

Localized Pain and Hyperæsthesia in Pregnancy.—Dr. MACKENZIE related a case in which the patient, the mother of one child, and pregnant six months, suffered from exquisite pain and hyperæsthesia at two circumscribed spots, one near the knee and the other upon the thigh on the right side. No treatment employed had proved beneficial.

Dr. BARKER referred to a case in which the patient had severe pains in the calf of the left leg, simulating after-pains, and they were treated accordingly.

Dr. GILLETTE suggested that the pain in Dr. Mackenzie's case was neurotic in character.

Dr. PALLEN suggested that it might be due to obstruction of the lymphatics.

Singular Pains produced by Ergot.—Dr. C. S. WARD mentioned a case in which ergot administered with treatment of a uterine fibroid produced intolerable cramps in the plantar fascia.

Suspected Peritonitis suddenly developed.—Dr. GREENE reported a case as follows: He was called to attend a primipara aged twenty-six, in labor at full term, at 8 P. M. The labor was completed normally at 3 A. M. the following day. The uterus contracted firmly after the delivery of the placenta. Her pulse was 90; skin moist and warm. Within an hour, and after the child had been placed to the breast, the woman suddenly complained of feeling very weak, but there was no evidence of hæmorrhage, concealed or otherwise, but the pulse was 165; no unusual pain or tenderness of the abdomen. The head was lowered, brandy was given hypodermically, and the patient was put under the influence of morphia. Two hours after delivery the pulse was 150; temperature 103¼° F.; no abdominal pain; lochia and skin natural. At 9 A. M. the influence of the morphia was marked, and her respirations were ten to the minute. In the evening the pulse was 120, and temperature 101° F. On the third day after delivery the pulse fell to 92, and in the mean time there was no abdominal pain or tenderness, and the lochia were natural. The milk came in quantity on the fourth day, and from that time she went on to good recovery. Dr. Greene asked for suggestions regarding the cause of the symptoms.

Drs. BARKER and W. M. CHAMBERLAIN suggested the occurrence of slight pulmonary thrombosis.

Secondary Hæmorrhage after Labor.—Dr. H. T. HANKS related the history of a case in which the patient had a normal labor, with the exception, perhaps, of the loss of a little more than the usual quantity of blood when the child and placenta were delivered. The uterus contracted firmly, and the patient did very well for twenty-four hours, but the pulse remained from 90 to 105; her temperature was 102° F.; and both pulse and temperature remained elevated during the next six days. Suspecting that she was suffering from malarial poisoning, quinine was given freely, and the temperature and pulse soon became about normal. She continued to do very well until the sixteenth day after labor, when she was suddenly taken while standing, with profuse uterine hæmorrhage. By the use of electricity, ergot, and hot-water intra-uterine injections, the hæmorrhage was arrested, but, in absence of ulceration or laceration, the doctor was at loss to know why it should occur.

Dr. BARKER spoke of malarial poisoning as a cause of secondary hæmorrhage in the puerperal condition, and illustrated his remarks by referring to several cases. He inclined to the opinion that the hæmorrhage in Dr. Hanks's case was due to systemic causes.

Dr. **Garrigues** suggested detachment of a thrombus, more likely to occur in an enfeebled than in a good general condition, hence not inconsistent with Dr. Barker's suggestion. He believed the hæmorrhage depended upon some local as well as general cause.

The **President** suggested a possible explanation in the occurrence of a supernumerary lobe of the placenta, which remained when the main portion of the placenta was delivered, and related a case in illustration of the suggestion.

Dr. **Hanks** remarked that, in his case, there was not at any time any offensive lochial discharge, nor had the hæmorrhage been repeated.

The Society then went into executive session.

Bibliographical and Literary Notes.

Art. I.—*The National Dispensatory.* Containing the Natural History, Chemistry, Pharmacy, Actions and Uses of Medicines. Including those recognized in the Pharmacopœias of the United States, Great Britain, and Germany, with Numerous References to the French Codex. By **Alfred Stillé**, M. D., LL.D., etc., and **John M. Maisch**, Phar. D., etc. Second Edition, thoroughly revised, with Numerous Additions. With Two Hundred and Thirty-Nine Illustrations. 8vo., pp. xii.-1680. Philadelphia: H. C. Lea, 1879.

The second edition of this work follows so closely upon the issue of the first that we must conclude there was either a great demand for it, or the authors felt the need of some changes which have been instituted in the present volume. Both reasons are doubtless in part true, and we are glad to see the book reappear with its improvements.

Among the changes noted we may mention a revision in the series of illustrations, with some additions; the addition of some new matter, especially relating to the physiological action of remedies and their medicinal uses; the addition of the metric system of expressing doses, along with the apothecaries' weight; and the extension of the "Therapeutical Index." These changes all seemed demanded in order to keep the work abreast with the times.

Inasmuch as the former edition escaped notice at our hands, we will venture a few remarks respecting the general features of the book. We can appreciate the difficulty of the task of eliminating, from the vast amount of material which modern research has furnished, that which is useless or of little value. However well or poorly this work has been done, we think the authors have at least made the work as comprehensive, so far as including individual remedies is concerned, as the wants of the general practitioner require and the advances of science warrant. The general plan adopted is the arrangement of the included articles of the materia medica and the preparations, both officinal and non-officinal, alphabetically, each description including the natural history, chemistry, physiological actions, and the pharmaceutical and medicinal uses of the substance in question. The botanical description is not so detailed in some instances, nor are the general "Properties" so full as might be expected, but perhaps the work is sufficiently complete in this respect for all practical purposes. The Appendix includes tables of weights and measures of all the systems, with rules for converting the apothecaries' weights and measures into those of the metric system, tables of thermometry, lists of reagents, etc. The therapeutical index, or index of diseases with reference to remedies, in addition to the general index, is an excellent feature of the work. The work is a little more concisely written than the "United States Dispensatory," and contains about two hundred fewer pages than the latter. There is a notable difference in the length of description of remedies which usually occupy a great space in works on materia medica, such as opium, arsenious acid, etc. The chemistry and physiological and therapeutical action of each remedy seem to be sufficiently full and are very satisfactory. The authors do not fail to discuss in a condensed manner all mooted questions of recent promulgation. The work is brought well up to the time, containing the description of such articles as cockroach (*blatta orientalis*), hydrobromic acid, the alkaloid sophoria, recently described by Wood, coto, etc. We do not find any mention made of svapnia, a recent preparation of opium.

There is but little to note with respect to special therapeutical views. The authors believe that alcohol is a food within certain limits, not only by retarding oxidation of tissues, but by being converted into fat. Respecting the employment of digitalis as a heart tonic in certain febrile and inflammatory diseases, the authors speak with emphatic condemnation, claiming that the modern views (entertained, we may say, by Fothergill, H. C. Wood, Bartholow, and certain experimenters) are the revival of an old, exploded theory. We incline to the belief that, in diseased conditions in which there is danger from heart debility, remedies which contract the capillaries and thus obstruct the circulation—calling for increased exertion on the part of the heart—are contraindicated. The explanation of the usefulness of digitalis in a certain class of organic and functional diseases of the heart is found in the development of nutrition in the heart itself, occasioned by the increased fullness of the coronary arteries under a primary stimulus of the remedy (p. 150). We make the following quotation from p. 511:

"That digitalis does not give a real increase of strength to the heart is shown by the fact that, when the pulse-rate is slowest, a comparatively slight muscular exertion, such as changing the recumbent for the erect posture, will sometimes cause the pulse to rise from the lowest point reached under the influence of the medicine to one far above the normal rate. . . . The tendency to rigid muscular contraction does not affect all the heart muscles in an equal degree, but chiefly those of the left ventricle. It is this power which, in certain cases of positive or relative debility of that ventricle, renders the medicine a valuable remedy, while its action is maintained within certain bounds; but beyond these it tends to obstruct the cardiac circulation, and, by suddenly preventing the free passage of blood through the heart, to cause death by syncope."

In fevers in an advanced stage, it is remarked, "where the heart is feeble, digitalis must be very circumspectly used. In-

deed, the more frequent the pulse is in fever, the less indicatio
is there for digitalis." And, "it is sufficient to remark that foo
and cordials have always been found effectual in such cond
tions, and that they expose the patient to no possible risk
digitalis does." The mechanism of its effects on cardiac dro
sy and on the renal secretion in diseased conditions (it is n
a direct diuretic) is ingeniously explained. The authors co
demn the use of opium in delirium tremens, and attribute t
great mortality from this affection in former times to the e
ployment of this remedy.

On a general review we must give the work our decid
approval. The general arrangements, the excellent mann
in which the individual articles are presented, the emine
practical character, together with the positiveness of expre
sion in the therapeutical indications of special remedies, th
adoption of the metric system of doses, and the fact that i
for the most part abreast with the most recent developme
of scientific investigation, all tend to make it the best dispe
satory extant. We will not allude to a few inaccuracies
expression common to most medical works. The style of
volume is good.

Art. II.—*Color-Blindness: Its Dangers and its Detection.* By
Jeffries, A. M., M. D. (Harvard), Fellow of the Massachusetts
ical Society; Ophthalmic Surgeon Massachusetts Charitable E
Ear Infirmary, Carney Hospital, and New England Hospital for
and Children; Member of the International Periodic Con
Ophthalmology, American Ophthalmological Society, Boston
of Medical Sciences, Boston Society for Medical Observation,
Society of Natural History, etc. Boston: Houghton, Osgood
The Riverside Press, Cambridge, 1879. Pp. 312.

Dr. Jeffries had already written quite extensively
this subject, and in this book he has collected the several
written; but he has done more than this, for he has give
well as the material collected in his already published
a compilation of all that is known on this interesting
Dr. Jeffries was, we believe, the first to call public atte
this country to the dangers and the prevalence of col
ness. And his monograph is only the third publication

form on this subject which has appeared, although it will be seen, by reference to the bibliography appended to the volume, that the literature on the subject is a very extensive one. A great deal of the book is taken from Professor Holmgren's work, including what is essential to be known and understood by railroad officials and the specialists they may employ in carrying out a system of thorough examinations. The importance for such a course may be realized when it is stated that experiments made on large scale, in three or four different countries in Europe, and confirmed by the investigations made by Dr. Jeffries in this country, show that about one person in twenty-five is partially or completely color-blind.

The obvious and great dangers arising from such defects in railroad employees, mariners, pilots, etc., give the subject its great practical value, and these dangers are so great as to demand the immediate attention of the community. Dr. Jeffries thinks that the occurrence of many accidents which can not be otherwise understood is to be referred to this cause; and, if the defect be (as it usually is) congenital, it is incurable; there is no adequate protection but "the elimination from the *personnel* of railways and vessels of all persons whose position requires perfect color-perception, and who fail to possess it." He therefore urges that "through a law of the Legislature, orders from State railroads commissions, or by the rules and regulations of the railroad corporations themselves, each and every employee should be carefully tested for color-blindness, and by an expert competent to detect it. The tests and methods of examination should be uniform. All deficient should be removed from their posts of danger. Every person offering himself as an employee should be tested for color-blindness, and refused if he has it. Every employee who has had any severe illness, or has been injured, should be tested again for color-blindness before he is allowed to resume his duties. Periodic examinations of the whole *personnel* should also be required." Such rules as these are already in force in many parts of Europe, and we hope to see them introduced here. Dr. Jeffries's efforts are in the right direction, and he deserves no little credit for his faithful work. But, while we have thus dwelt mainly upon the practical bearing of the book, it is also interesting and instructive in other respects, being as it really is a detailed and exhaustive treatise, explaining the nature of color-perception, pointing out the apparent causes of color-blindness, and the different forms which it takes—commonly red-blindness or green-blindness, more rarely violet-blindness—discussing the various methods which have been devised for detecting it, and furnishing a series of tests which are both simple and conclusive. While it is true that the book consists largely of a translation from the work of Professor Holmgren (to whom full credit is given and the book dedicated), all the facts gathered by other investigators are also summarized, and the results of eighteen thousand independent examinations of his own are given.

Both the profession to which the author belongs and the public at large owe him a debt of gratitude for the practical manner in which he has presented the subject, making it at once interesting and useful.

The common interest which centers in such a question is sufficient excuse, if any were needed, for the attractive and popular style in which the book is written, but not for the way in which it is bound. All interested in the study of color-blindness, or who may at any time desire to refer to the literature of the subject, will thank Dr. Jeffries for the extensive bibliography which he has appended.

ART. III.—A *Treatise on Hygiene and Public Health.* Edited by ALBERT H. BUCK, M. D., American Editor of Ziemssen's "Cyclopædia of the Practice of Medicine"; Instructor in Otology in the College of Physicians and Surgeons, New York; Aural Surgeon to the New York Eye and Ear Infirmary. Vols. I. and II. William Wood & Co., 1879.

IN these two handsome volumes we have the result of a plan for the production of a work similar in purpose to that of the German volume on "Hygiene," edited by Ziemssen, but written with special reference to the wants of the profession in the United States. The work as now completed is in every respect highly satisfactory, and may be fairly said to fill a blank that has existed for many years in the medical literature of this country. To review in detail a collection of so many papers on entirely different subjects would, we imagine, serve the purposes of our readers less than a brief mention of the authors and their work.

The introduction, treating of "Causes of Disease, and the Jurisprudence of Hygiene," is written by John S. Billings, Surgeon United States Army. Professor A. Jacobi contributes the very able chapter, of sixty-five pages, on "Infant Hygiene." Dr. James Tyson, Professor of Pathology and Morbid Anatomy in the University of Pennsylvania, writes on "Food and Drink." The treatise on "Drinking-Water and Public Water-Supplies," by Professor William Ripley Nichols, of the Massachusetts Institute of Technology, deals with that important subject in a thorough and masterly manner. Dr. A. Brayton Ball contributes a chapter on "Physical Exercise," showing careful preparation and a profound knowledge of the subject. The "Care of the Person" is the title of a paper by Dr. Arthur Van Harlingen, of Philadelphia. Dr. William H. Ford, President of the Board of Health of Philadelphia, writes a long and valuable paper on "Soil and Water." Dr. D. F. Lincoln, of Boston, writes on "The Atmosphere." On the general principles of "Hospital Construction" there is an excellent paper by Dr. Francis H. Brown, of Boston. This completes the first volume, of seven hundred and ninety-two pages.

The second volume, of six hundred and fifty-seven pages, is composed as follows: The "Hygiene of Occupation" is treated by Dr. Roger S. Tracy, Sanitary Inspector of the Board of Health, New York. The "Hygiene of Camps" is written by Charles Smart, Assistant Surgeon, United States Army. The "Hygiene of the Naval and Merchant Marine" is contributed by Dr. Thomas J. Turner, Medical Director, United States Navy. The "Hygiene of Coal-Mines" is by Henry C. Sheafer, Coal Editor of the "Miner's Journal." Rossiter W. Raymond, Ph. D., Editor of the "Engineering and Mining Journal," writes on the "Hygiene of Metal Mines." The subject of "Infant Mortality and Vital Statistics" is prepared by Dr. Thomas B. Curtis, of Boston. The chapter on the "Adulteration of Food" is written by Stephen P. Sharples, of Boston, Chemist and Inspector of Milk for the

City of Cambridge. Dr. Roger S. Tracy contributes a second chapter on "Public Nuisances." Dr. S. Oakley Vanderpoel, Health Officer of the Port of New York, contributes the paper on "Quarantine," which is written solely with reference to seaport towns. "Inland Quarantine" is dealt with by Dr. S. S. Herrick, Secretary of the Louisiana State Board of Health. The subject of "Smallpox and other Contagious Diseases" (including Smallpox, Scarlet Fever, Measles, and Whooping Cough) is written jointly by Drs. Allan McLane Hamilton and Bache McE. Emmet, of New York. The "Hygiene of Syphilis" is written by Dr. F. R. Sturgis, Clinical Lecturer on Venereal Diseases in the University of the City of New York. Elwyn Waller, Ph.D., Chemist to the Metropolitan Board of Health, New York, writes the chapter on "Disinfectants." A third chapter by Dr. Roger S. Tracy treats of "Village Sanitary Associations." Dr. D. F. Lincoln, of Boston, closes the volume by a chapter on "School Hygiene."

Each paper is followed by a table of reference to the bibliography of the subject treated, enabling the reader easily to follow it further if so inclined.

It will be seen from the bird's-eye view we have given how comprehensive is the plan of the work, and the reputation of the contributors is a guarantee of the thoroughness with which the plan has been carried out.

We congratulate the editor on having given to the profession and the public a work of much interest and of immense practical value.

ART. IV.—*A Clinical Treatise on the Diseases of the Nervous System.* By M. ROSENTHAL, Professor of Diseases of the Nervous System at Vienna. With a Preface by Professor Charcot. Translated from the Author's revised and enlarged Edition. By L. Putzel, M. D., Physician to the Class for Nervous Diseases, Bellevue Hospital Out-Door Department, etc. Two vols. New York: William Wood & Co., 1879.

THIS book is one of the best of the series in which it is published. It is systematic in treatment, clearly and simply written, is marred by no imaginative theories, and attempts to create no factitious interest by the recital of extraordinary cures or cases. It is also tolerably well up as regards the physiology and pathology of the nervous system; and an excellent knowledge of cerebral localization can be obtained from its various chapters, particularly that on tumors.

In treating of the subjects of pathology and morbid anatomy, Professor Rosenthal computes more than he criticises; his judgment on mooted points, however, is generally excellent. Thus, as regards the nature of epilepsy, he says: "The hypothesis of a vaso-motor neurosis of the brain offers the most satisfactory and simple solution of the phenomena which occur during an attack of epilepsy. A vascular spasm, starting from the vaso-motor center, rapidly becomes general, and causes cerebral anæmia, thus causing an obstruction to the reciprocal reactions which take place between the blood and brain. . . . A circumscribed vascular spasm produces partial epilepsy. . . . There is an abnormal excitability of the nerve-centers peculiar to epileptics. . . . Pathological anatomy furnishes us with very few data with regard to the nature of epilepsy." In regard to the nature of tetanus, he states that "the theory of reflex irritation furnishes us with the most satisfactory explanations of this affection." This produces a condition of vascular erethism in the nervous system, especially in the gray substance, which is richer in capillaries. This may, if prolonged, result in nuclear proliferations, etc. Sometimes a neuritis ascendens takes place, resulting in a subacute central myelitis."

On the subject of therapeutics the author is in some respects unsatisfactory. His mention of the approved remedies is generally very brief, and his description of therapeutical methods has the same fault. We are told in the translator's preface, however, that he lays much stress upon hydro-therapeutics, and the same authority expresses the hope that the book may be the means of spreading this therapeutical resource more widely. We doubt if the especial prominence and value of hydrotherapy would be generally noticed if attention were not thus called to it.

It is somewhat remarkable that, in a book whose preface is written by Professor Charcot, there is no mention of metallotherapy. This fact, however, does not much affect the value of the work.

Some cheap, but sufficiently useful, illustrations have been added by the translator, who has done his own work very well.

Art. V.—*Lectures on Electricity in its Relation to Medicine and Surgery.* By A. D. Rockwell, A. M., M. D., Electro-therapeutist to the N. Y. State Woman's Hospital; Member of the American Neurological Association; Fellow of the New York Academy of Medicine; Member of the New York County Medical Society, etc. New York: William Wood & Co., 1879.

These lectures originally appeared in the "Virginia Medical Monthly," and deal more especially with the practical aspects of the subject. They are more suggestive than exhaustive in their character, and as such the author so intended—it would be a manifest absurdity, indeed, to expect more—and yet, to our mind, he has succeeded better than his modest preface would lead us to believe, for the work abounds in lucid expositions of many obscure points of doctrine in this ever-advancing science. The first lecture, besides much of the history of electro-physics, contains a well-merited rebuke to those who employ the several currents empirically, or who intrust their administration to the patients themselves. Without accurate powers of observation, they satisfy themselves with too little knowledge of the subject, and take counsel of their self-conceit rather than their common sense. We meet this class in every walk of life, but more especially in this field, which offers more than the ordinary inducements for charlatanry. The perambulating exhibitor in our streets obtains results as brilliant, and is, perhaps, equally esteemed by his confiding crowd. The successive lectures treat of Electro-Physiology; Electro-Diagnosis; Methods of Application; Electro-Medical Apparatus; Treatment of Special Diseases; and Electro-Surgery, closing with an appended case of considerable interest.

The work contains a number of woodcuts, with an explanatory text, and several well-told cases. Its style is a model of clearness, and its matter not at all too elementary in character, particularly for those who approach this department of science with misgivings of its intricacy. We may say further there are no evidences of an undue enthusiasm, or of hap-hazard statements. Facts are sought for, and opinions weighed with candor. Every page, in fact, impresses us with the sincerity of the writer's efforts to teach conscientiously as to what may and what may not be expected from his specialty. As an epitome of the incontrovertible in this applied science, and further, as a pleasant introduction to a more serious study of the many abstruse and as yet unsolved problems of electricity, we can commend our readers to this work. We might refer to larger treatises on the subject, but to none more satisfactory or practical.

ART. VI.—*Manual of the Principles and Practice of Operative Surgery.* By STEPHEN SMITH, A. M., M. D. 12mo, pp. viii.–689. Boston: Houghton, Osgood & Co., 1879.

THE author of this work aims to give in condensed form a full account of the received opinions of the profession with regard to the conditions requiring and the steps involved in operative procedures. Throughout the work abundant reference is made to the leading authorities. With each subject are given a description of the case, the principles of or indications for treatment, with the several procedures in the treatment fully detailed; and, in connection with the details of special operations, the surgical anatomy is exactly given. Mooted questions are not discussed at length. We are not told so much what *not* to do, as what it is essential to do. The arrangement of the work is very methodical.

Section I. is devoted to "The Principles," including chapters on the obligation, examination, preparation, hæmorrhage, anæsthesia, the operation itself, emergencies, dressing, appliances, repair and cicatrization. In Section II. "The Osseous System," including the diseases and injuries of bones and their treatment, is given. The succeeding sections include descriptions of the special diseases occurring under the general heads of the muscular, circulatory, nervous, tegumentary systems, the digestive, respiratory, urinary, generative organs male and female, and the extremities.

It may be remarked that the book is very full of good information, the points are all very clearly and explicitly put, and the rules for operative procedures or other treatment are given, in most instances, in accordance with the latest views. We should not, however, advise the young surgeon to rely wholly upon the author's account of fractures. His views are not quite up to the times on the subject of Colles's fracture, nor on that of epiphyseal fracture of the upper extremity of the humerus. Nevertheless, in the main we regard the work very highly; and, so far as we have noticed, the several steps essential to special operations are well described. The most recent views relating to the treatment of joint-diseases seem to be given, and it is well known that the author is an ardent advocate of Lister's antiseptic treatment of wounds and certain diseases. The work will be found exceedingly convenient.

ART. VII.—*Wurtz's Elements of Chemistry.* Translated and edited by WM. H. GREENE, M. D., etc. 12mo, pp. 887. Philadelphia: J. B. Lippincott & Co., 1879.

As "an embodiment of modern chemical ideas," this book is entitled to our favorable consideration. The merit of the work is also flatteringly attested by the rapidity with which the French editions succeed each other, this being translated from the fourth.

The natural, easy manner in which the various points are developed and related in the several chapters indicates not only the scientist, but the apt teacher.

In the beginning the mind of the reader is introduced by means of purely physical bodies to chemical combinations, and through merely mechanical force to chemical forces.

The "Atomic Theory" is clearly brought out in connection with Gay Lussac's laws relative to sum and volume of gaseous compounds. These laws of Lussac may be digested as follows: 1. There is a simple relation between the volumes of gases which combine. 2. There is a simple relation between the sum of the volumes of the combining gases and the gases resulting from the combination. If the definite proportion by weight in which bodies combine represent, according to Dalton, the relative weights of their atoms, it is natural to conclude that the definite proportions by volume in which gases combine, according to Lussac, represent the volumes occupied by their atoms.

The subject of "Spectrum Analysis" is introduced with a brief history of the development and application of this method of analysis. The latter part of the book is devoted to "Organic Chemistry," embracing the organic, physiological, proximate principles, and many important remedies of the pharmacopœia.

ART. VIII.—*On the Treatment of Pulmonary Consumption by Hygiene, Climate, and Medicine, with an Appendix on the Sanitaria of the United States, Switzerland, and the Balearic Islands.* By JAMES HENRY BENNET, M. D., etc. Third edition. 8vo, pp. xii.–286. Philadelphia: Lindsay & Blakiston. 1879.

THIS edition of Dr. Bennet's book differs from the previous ones but little, except in the addition of the Appendix mentioned in the title. Dr. Bennet, it is well known, takes issue with the Virchow and Niemeyer school, who regard consumption as being a form of chronic or caseous pneumonia, and believes it to be of tubercular origin, thus agreeing with the late Professor Bennett, of Edinburgh, and Dr. Flint, of New York. He regards alimentation, together with a general sthenic treatment, as of the highest importance.

Aside from a certain diffuseness of style, the book is to be recommended as exceedingly practical, and safe to follow.

ART. IX.—*Yellow Fever.* By T. O. SUMMERS, M. D., etc. 12mo, pp. 72. 1879.

YELLOW FEVER literature comes to us from many sources, teaching many and conflicting theories as to the etiology, pathology, and prophylaxis of this formidable disease. We do not propose to harmonize these conflicting factions, as many theories, hitherto accepted as sound, have been, in the past eighteen months, completely shattered by that iconoclast —fact.

Dr. Summers advances and ably defends the following theories in regard to the origin and cause of yellow fever:

I. It is a zymotic, or fermentative disease.

II. It does not depend upon a specific germ.

The author concludes that, as carbonic acid, one of the products of fermentation, is a solvent of albumen, "whenever it is set free in the blood it reduces the albumen from a state of molecular suspension to that of solution, thus rendering it subject to osmosis, and opening up a series of pathological changes which determine the most prominent feature of the disease."

The book is the result of extended observation in the treatment of yellow fever, and the various features of the subject are well brought out. We would particularly recommend the chapter upon pathology, as it is the result of much actual investigation in the dead-house of the City Hospital of Memphis during the epidemic of 1878.

ART. X.—*Students' Pocket Medical Lexicon: giving the Correct Pronunciation and Definition of all Words and Terms in General Use in Medicine and the Collateral Sciences, the Pronunciation being plainly represented in the American Phonetic Alphabet, with an Appendix containing a List of Poisons and their Antidotes, Abbreviations used in Prescriptions, and a Metric Scale of Doses.* By ELIAS LONGLEY, author of a "Pronouncing Vocabulary and Personal Names," "Eclectic Manual of Phonography," and a series of phonetic school-books. Philadelphia: Lindsay & Blakiston. 1879.

THIS is a very compact and complete little dictionary, and will be found useful for reference, not only as to meanings, but for the correct pronunciation. The adoption of the phonetic system for representing spoken sounds is a decided improvement on the cumbersome methods hitherto adopted in dictionaries and other books where it was desired to impart the pronunciation. We commend this work as particularly useful to students.

ART. XI.—*Fasting Girls: Their Physiology and Pathology.* By W. H. HAMMOND, M. D., etc. 12mo, pp. 76. New York: G. P. Putnam's Sons, 182 Fifth Avenue, 1879.

IF the subject of this brief monograph requires further discussion, Dr. Hammond is preëminently the man to discuss it

He devotes the first chapter to a consideration of abstinence in the middle ages; the second, to abstinence in modern times; the third, to abstinence from food, with stigmatization; the fourth, to the Brooklyn case; and the fifth and last, to the physiology and pathology of inanition.

The author discusses the question fairly, and, although he denounces strongly all supernatural claims and those who make them, he proves his position by authorities upon the subject both *pro* and *con*.

ART. XII.—*Posological Table: Including all the Officinal and the most frequently employed Unofficinal Preparations.* By CHARLES RICE, Chemist, Department of Public Charities and Correction, N. Y. Revised and approved by members of the Medical Boards of Bellevue and Charity Hospitals. New York: William Wood & Co. 1879.

THIS work is evidently the result of much careful work and inquiry on the part of the author. It will be found a convenient guide in regard to the average doses of ordinary remedies, and the maximum dose that may be employed with safety. It will serve the purpose of apothecaries as well as physicians, and has the merit of being most accurately and carefully prepared.

ART. XIII.—*The Pharmacopœia of the British Hospital for Diseases of the Skin, London—Great Marlborough Street (West Branch); Finsbury Square (East Branch); Newington Butts (South Branch).* Edited by BALMANNO SQUIRE, M. D., Senior Surgeon to the Hospital. London: J. & A. Churchill. 1879.

THIS collection of prescriptions gives an interesting insight into the practice of a celebrated hospital, and will prove suggestive to those practitioners whose clinical opportunities are small or of ancient date.

ART. XIV.—*Notes on Rheumatism.* By JULIUS POLLOCK, M. D., Fellow of the Royal College of Physicians, and Lecturer on Medicine, Charing-Cross Hospital; Physician to the Foundling Hospital. Second edition. London: J. & A. Churchill. 1879. Pp. 114.

THE point made by the author of this unpretending little book is that salicylic acid, properly given, is almost a specific in the treatment of acute rheumatism. In muscular rheumatism he has obtained only negative results with the same remedy. A brief sketch of the symptoms and varieties of rheumatism is given, and some hints as to the general management the author has found most successful. A number of illustrative cases are given in an appendix.

ART. XV.—*Pocket Therapeutics and Dose-Book: with Classification and Explanation of the Actions of Medicines, their Doses, etc.* By MORSE STEWART, M. D. Second edition, revised and enlarged. Detroit, Michigan. 1879. Price, $1.

A VERY convenient reminder, giving minimum and maximum doses in troy and metric system; an index and definition of diseases, with appropriate remedies; genitive endings of all medicines and preparations in italics; poisons and their antidotes; besides other information useful to the physician in daily practice. It is so small a volume that it may very appropriately be called a "pocket-book."

ART. XVI.—*Walsh's Physicians' Handy Ledger, a Companion to Walsh's Physician's Combined Call-Book and Tablet.* Washington, D. C.: Ralph Walsh, M. D. Price, $3.

WE have had occasion before to speak very favorably of this ledger. It is a book of three hundred pages. Each page has space for recording daily visits, and all necessary details of charges for one patient or family for a whole year. The book is of very convenient size and shape.

ART. XVII.—*Notes on the Yellow Fever Epidemic at Hickman, Kentucky, during the Summer and Autumn of 1878.* By JOHN R. PROCTER. 4to. pp. 48. Geological Survey of Kentucky, 1879.

THESE notes are accurately compiled and interesting throughout. The paper is illustrated with plates and engravings, and a tabulated statement of two hundred and sixty-one cases of yellow fever is given.

ART. XVIII.—*The Yellow Fever Germ on Coast and Inland. A Discussion of Ship and Railroad Quarantine.* By HENRY FRASER CAMPBELL, M. D., etc. 8vo, pp. 26. Georgia: J. D. Harrison & Co., 1879.

THE author, arguing from the undisputed ground of *the germ propagation* of the disease, ably discusses the subject, and advocates the most rigid quarantine as a means of excluding the dread pestilence.

ART. XIX.—*Aids to Anatomy.* By GEORGE BROWN, M. R. C. S., late Demonstrator of Anatomy at Westminster Hospital Medical School, etc. Fourth thousand. Pp. 64. New York: G. P. Putnam's Sons, 1879.

THIS is one of the "Students' Aid Series," and contains in brief the principal points in anatomy, so grouped and arranged that they may be easily grasped and remembered.

ART. XX.—*The Multum in Parvo Reference- and Dose-Book.* By G. HENRI LEONARD, M. D. Third edition, revised and enlarged. Twenty-third thousand. Detroit. 1879.

THE new edition of this book has been rendered complete of its kind, and contains the doses of over twenty-five hundred preparations, including all the new and rare ones, besides a variety of other information.

ART. XXI.—*Aids to Forensic Medicine and Toxicology.* By W. DOUGLAS HEMMING, M. R. C. S. New York: G. P. Putnam's Sons, 1879.

THIS is also one of the "Students' Aid Series," and is a second edition. It presents in the most condensed manner possible the most important points in forensic medicine and toxicology.

ART. XXII.—*Memoranda on Poisons.* By THOMAS HAWKSLEY TANNER, M. D., F. L. S. Fourth American, from the last London enlarged and revised edition. Philadelphia: Lindsay & Blakiston. 1879. Price, 75 cts.

WE are glad to see another edition of this excellent little book, which is already well known and evidently very popular.

Books and Pamphlets Received.—The Pathology and Treatment of Venereal Diseases. By Freeman J. Bumstead, M. D., LL. D., late Professor of Venereal Diseases at the College of Physicians and Surgeons, New York; late Surgeon to the New York Eye and Ear Infirmary, etc. Fourth edition, revised, enlarged, and in great part rewritten by the author and by Robert W. Taylor, A. M., M. D., Professor of Skin Diseases in the University of Vermont, Attending Surgeon to Charity Hospital, etc. With 138 Woodcuts. Philadelphia: Henry C. Lea, 1879. Pp. 835.

A System of Midwifery, including the Diseases of Pregnancy and the Puerperal State. By William Leishman, M. D., Regius Professor of Midwifery in the University of Glasgow, etc. Third edition, revised by the author. With additions by John S. Parry, M. D. With 205 Illustrations. Philadelphia: Henry C. Lea, 1879.

Diseases of Women. By Lawson Tait, F. R. C. S., Surgeon to the Birmingham Hospital for Women, etc. Second edition, thoroughly revised and enlarged, specially prepared for "Wood's Library." New York: William Wood & Co., 1879.

A Text-Book of Physiology. By M. Foster, M. A., M. D., F. R. S. Prælector in Physiology and Fellow of Trinity College, Cambridge. With illustrations. Third edition, revised. New York: Macmillan & Co. Price, $3.50, cloth.

St. George's Hospital Reports. Edited by William Howship Dickinson, M. D., F. R. C. P., and Thomas Pickering Pick, F. R. C. S. Vol. IX. 1877-'78. London: J. & A. Churchill.

A Ministry of Health and other Addresses. By Benjamin Ward Richardson, M. D., F. R. S., M. A., LL. D., etc. New York: D. Appleton & Co., 1879.

The Physician's Visiting List for 1880. Twenty-ninth year of its publication. Philadelphia: Lindsay & Blakiston.

Health Primers. The Skin and its Troubles. New York: D. Appleton & Co., 1879.

American Health Primers. The Throat and the Voice. By J. Solis Cohen, M. D. Philadelphia: Lindsay & Blakiston, 1879.

Walsh's Physician's Combined Call-book and Tablet. Fourth edition. Washington: Ralph Walsh, M. D.

Reports on the Progress of Medicine.

CONTRIBUTED BY DR. G. R. CUTTER.

SURGERY.

Ulcus Clysmaticum.—Under this name Koester describes ("Berlin. klin. Wochenschr.") an ulceration of the rectum with a constant seat and characteristic appearance, and which had hitherto been mentioned only by Recklinghausen. It is round, frequently funnel-shaped, passes into the rectal walls in a direction inward and from below upward and outward, presents no inflammatory swelling of the borders or the base, and is always located on the anterior wall of the rectum, as a rule 5 ctm. (from 3 to 8 ctm.) above the anus. Its depth varies. Sometimes it extends through the entire wall of the rectum, and causes suppuration of the connective tissue of the pelvis and inflammation of the abdominal walls. It has been demonstrated that so-called puerperal peritonitis has arisen from such an extended ulceration. It is caused by a clumsy and injudicious use of the clyster syringe. At the place mentioned, there is a fold of mucous membrane. The upper portion of the walls of the rectum, the prostate, the uterus, or, in the pregnant woman, the head of the child, presents an obstacle to the introduction of the point of the instrument in an horizontal direction and causes it to be caught in the folds of the mucous membrane. If under these conditions the introduction be forced in the same direction, it may easily happen that the mucous membrane or even the entire thickness of the rectal walls may be perforated. The circumstance that rectal fistulæ generally occur at this place strengthens the suspicion that they may also have their origin in an unskillful use of the clyster syringe.—"Ugeskrift for Laeger." G. R. C.

THEORY AND PRACTICE.

Intravenous Injection of Milk. By Austin Meldon, L. and F. R. C. S. Irel., L. K. Q. C. P. I., M. R. I. A., Surgeon to Jervis Street Hospital, formerly Demonstrator of Anatomy in the Catholic University of Ireland, etc., etc. ("Medical Press and Circular," October 22, 1879).—At the meeting of the British Medical Association held in August last, I read a paper on the intravenous injection of milk, illustrated by five cases. Since that time I have operated on three other patients with such favorable results that I deem it to be my duty to place the cases on record.

Lately a good deal has been written against the operation, and much trouble has been taken to show it is unphysiological. At present I do not purpose dealing with the subject on theoretical grounds, although much can be said even in this way in favor of the operation, but will be content to draw attention to the practical results of the operation. I may remark, however, in passing, that the conclusions drawn from the experiments on dogs can hardly be taken as conclusive, insomuch as in these experiments far too large a quantity of milk (comparatively speaking) has been used. It has been conclusively proved that if a large quantity of milk be injected into the human subject the operation is attended with the greatest danger. It has been urged that the oil globules are too large to pass through the smallest capillary vessels. The following cases show this assertion to be fallacious:

E. J. M., a delicate-looking gentleman from Cheshire, aged thirty, first sought my assistance on November 29, 1878. He complained of pain in the head and back, loss of flesh, strength, and energy, slight intercurrent diarrhœa, and inability to sleep for more than one hour at a time. On examination I found the temperature 100°, the pulse 110, and considerable tenderness and gurgling in the ileo-cæcal region. A few rose-colored spots were visible on the abdomen.

From the account given to me and from these symptoms I came to the conclusion that he was in the third week of typhoid fever.

During the next three days there was but little change in his condition, except that the treatment improved his sleep at night, but his temperature and pulse remained high.

On the fourth day there was a smart attack of diarrhœa, which was checked with kino, catechu, and opium. On December 4th the temperature was 105°, and some blood had been passed at stool. On the 6th the temperature was 106°, and the pulse 120. There had been a slight bleeding from the nose, a good deal of blood from the bowels, and recurring diarrhœa. During the next four days he improved somewhat. From this time, however, the temperature gradually rose until the 10th, when I was hurriedly summoned to his bedside. I found him in complete collapse, almost pulseless, breathing forty times in the minute, and the respirations short and incomplete. This condition, as well as what I learned from his friends, left no doubt in my mind that perforation of the intestines had occurred about half an hour before I saw him. Two grains of opium were at once administered, and repeated in two hours, and other appropriate treatment adopted. For some days he was kept almost completely under the influence of opium. A considerable amount of peritonitis ensued, and until December 17th he was considered in a hopeless condition. From this date the temperature commenced to fall, and the pulse decreased in frequency and increased in volume.

On the 25th the temperature was but 98°, and three days later he had a solid motion. From this date he took plenty of nourishment, *yet rallied very little.* On January 3d severe diarrhœa occurred, which reduced him to a moribund condition. Next day he was better, and continued to improve for a few days, when the diarrhœa recurred. Bed-sores now formed.

In this way matters went on till the 15th, when I made up my mind that his life could only be saved by transfusion. Having got the consent of his parents to the operation, I asked my friend Dr. Lyons to see the case in consultation with me. His opinion was, however, that in his then exhausted condition even the slight shock of the operation would prove fatal. He recommended that the body should be sponged with warm milk, and that he should be put on large doses of nitrate of silver. The result of this treatment was a slight improvement, which, however, lasted only a few days, when he gradually relapsed into his former exhausted condition. The thought of transfusion again occurred to me, and I made up my mind to try its effect. With this view I sought the assistance of my friend Dr. Robert M'Donnell, who I knew had very considerable experience in the transfusion of blood. In consultation we agreed that it was a suitable case to try the intravenous injection of milk.

On January 23d I obtained a cow from Mr. Moore's extensive dairy-yard, selecting one whose milk was of medium quality. Immediately before the operation the animal was milked on the premises, and the milk kept at the temperature of 98°.

The apparatus used in the injection was Dr. M'Donnell's simple but efficacious transfusion instrument, which, as is well known, consists of a glass funnel, having attached to it a piece of India-rubber tubing, with a small bulbous enlargement in the center, which enables the fluid to be injected in jerks. The India-rubber terminates in a nozzle which is introduced into the vein.

Everything being ready for the operation, an incision was made over the median basilic vein of the left arm, which was then cleared and raised —a large needle being passed under to steady it. The vein was now opened, the canula introduced, and slowly about ten ounces of milk injected. The operation lasted nearly fifteen minutes. During the injection the pulse increased in force, the patient complained of great cold, and his face became of a dusky hue. No sooner had the operation been finished than the respiration became very much obstructed, the patient gasping for breath, and the fingers, feet, and lips became cold and livid.

The operation was performed at a quarter past one. At two o'clock his condition was as follows: Temperature 96°, pulse could not be felt, respiration 40, unable to speak, feet cold, lips and fingers livid, hiccough, and very restless, tossing about his head and arms. Burnt brandy, a subcutaneous injection of ether, and mustard leaves over the heart were ordered. During the next hour he remained pretty much in the same condition, those about him expecting every moment to be his last.

At 3.30 the respiration became more tranquil. At 5.30 the temperature was 100° and the pulse 110, respiration 24, feet warm, felt very thirsty, could speak well, and has taken during the previous hour a fair share of nourishment. At 11 P. M. his temperature was 98°, his pulse 100, respiration 18, has a very healthy look, has been able to take nourishment freely, is much stronger and in very good spirits, says he feels quite well, is sitting up in bed describing his travels while he was yachting during last summer.

23d, 8 A. M.—Has passed a very good night, has taken nourishment freely throughout, is in good spirits, and has not had diarrhœa. Temperature 98·2°, pulse 96.

24th.—Pulse is much improved in character, no diarrhœa, but a small solid motion.

25th.—Bowels very healthy; temperature 97°, pulse 96.

26th.—Temperature still 97°, pulse 100; has had a little diarrhœa, is rather weaker.

27th.—Temperature 97°, pulse 110, diarrhœa has been checked, bedsores just healed, has slept well, and has taken nourishment freely.

28th.—Diarrhœa again severe; weaker.

31st.—Pulse 120; is very weak and nervous.

February 1st.—Proposed to inject milk again, but patient would not consent. He is still weaker.

2d.—Continues to lose strength; feels he is dying; parents have very little hope, but will not consent to a repetition of the operation.

3d.—Diarrhœa continues; legs also swollen; pulse intermittent, much quicker; subsultus tendinum.

5th.—Pulse hardly perceptible; respiration difficult; diarrhœa checked; has slept a little; temperature continues 97°; pulse 140.

6th.—Has consented to a repetition of the operation.

At 12 o'clock, having procured the same cow as on the last occasion, and having everything ready for the operation, I made an incision over the median basilic vein of the right arm. This I found in such a collapsed condition that it was with great difficulty I could satisfy myself that it was the vein I had raised. I injected 4½ oz. of milk at a somewhat higher temperature than that used at the former operation. The same symptoms followed, but in a much milder degree, and only lasted for about twenty minutes. The temperature rose to 101°. The pulse became much stronger, and for some short time he seemed to be much improved.

Just two hours after the operation he remarked that his arm was numb, and on looking at him I perceived that he had a slight epileptic convulsion, after which for a few moments he became almost insensible. Three times within the next twenty minutes he had a repetition of these convulsions, each one of which only lasted a few seconds, and were followed by gradually increasing longer periods of insensibility. The last of these, which was of a more tetanic character, proved fatal.

P. M., aged twenty-seven, a policeman, suffering from phthisis, consulted me about January 26th last. I had seen him about a year previously, when he had extensive deposit in both lungs. I now found him in the last stage of consumption, both lungs and larynx being engaged. For some weeks there had been constant diarrhœa, and both legs were much swollen. All my efforts to improve his condition or to check the diarrhœa having failed, and his only anxiety being to be able to be moved home, a distance of upward of forty miles, I entertained the idea of injecting some milk into his veins. With this view I asked my friend Dr. Collins to see the case, but his opinion was rather against the operation, as he did not think it could be of any service to him.

About two o'clock on February 7th I was summoned to his bedside, and found him moribund. The friends were most anxious that transfusion should be tried. Yielding to their earnest solicitations, I injected about 2¼ oz. of milk into the median cephalic of the left arm. The respiration immediately became hurried and the face somewhat livid, but the usual symptoms were not so severe as on the former operations, and the patient expressed himself greatly improved. I saw him again that evening, and I found that the diarrhœa had been completely checked, and that he had improved much in spirits and in strength. There was some albumen in the urine. The temperature was 100°.

Next morning, February 8th, he felt so much better that he dressed himself without assistance, and without fatigue was able to go to Moate, a part of the County Meath, by train, a distance of upward of forty miles.

T. W., a druggist, aged forty-two, residing at Skerries, first consulted me on May 2d. The history of his case he thus gives:

"Twenty-eight years ago I was seized with fever, accompanied with obstinate constipation, loss of appetite, and great prostration. From this I recovered very slowly, and remained for a considerable time extremely weak, and almost unable to walk.

"On several occasions since I had a recurrence of these symptoms. For twenty years I have had large ulcers on my legs, which have only within the last few years healed. The only medicine I took was sarsaparilla and iodide of potash. The attacks have been more frequent of late, and I have lost flesh gradually."

He was supported into my study, being unable to walk, and I have never seen any one so attenuated—being, in fact, little better than a skeleton. For some weeks he had been unable to dress or do anything else for himself. I failed to detect any pulse at his wrist; his heart's action was barely perceptible, and, in a word, his condition was such that I felt very uneasy lest he would die in my study. I strongly advised him to remain in town, and ordered him ammonia, ether, and other stimulants. I saw him that evening, when he had revived a little, and for a week I attended him without being able to perceive any further improvement.

I suggested to him the advisability of having milk injected into his veins, and he readily assented, as he looked upon himself as in a very hopeless condition. On May 12th I injected 6 oz. of goat's milk, which had been rendered more distinctly alkaline by the addition of some ammonia, into the median basilic vein of the left arm. During the operation his breathing became hurried, and he was continually sighing and yawning. His pulse improved, and his face became somewhat livid, but in about an hour's time, this latter, as well as the hurried respiration, subsided. Soon after he commenced, and remained during the day, perspiring profusely. The temperature rose immediately after the operation to 104°, but toward evening sank to 98·1°. No albumen was perceptible in the urine. Next morning his pulse was much stronger than I had before known it, and his appetite was greatly improved; he had some color in the face, that before the operation was a ghastly white, and during the night he had slept well.

14th.—Is somewhat low this day, and has had a little bilious vomiting.

15th.—Greatly improved; appetite much better; feels stronger; pulse continues to improve.

18th.—Sat up for a while in bed; pulse better; appetite good; and is in good spirits.

19th to *22d.*—Continued to improve, and a few days later was able to return home.

Has since continued to improve.

S. M., aged fifty-two, was a healthy woman all her life until about four years since, when she discovered that she had gradually been losing flesh for some time, and also that her appetite had of late considerably failed. During the past two years she has suffered much from cold feet and loss of sleep and strength.

I first saw her about nine months ago. She was then greatly emaciated; eat little; complained of severe headache, pains in the calves of the legs, and shortness of breath on the least exertion; her pulse was very weak, but no organic lesion could be detected. Six months' treatment, during which she took nourishment, tonics, and stimulants in every form, failed to arrest her disease. Ten days before I operated on her she was confined to bed, unable to stand from weakness. She cared very little for food, and her friends expected her death every moment. On May 30th I injected 6 oz. of goat's milk, at the temperature of 100°, into the median cephalic vein of the left arm. The usual train of symptoms followed. Her temperature reached 104°, but she expressed herself as feeling very comfortable, and during the day felt stronger and better than she had for twelve months. Next day she was able to take with relish a considerable quantity of nourishment, and was able to walk across the room. Each day I found her improved, until June 10th, when she was able to sit up the entire day. On the 15th of the same month she was able to walk in the open air, and a week later was strong enough to visit her solicitor and transact her usual business. Since that date she has continued to improve.

M. M'G., aged thirty-nine, has been the subject of well-marked phthisis for upward of twelve months. Of late he has lost a considerable quantity of blood from the lungs, and since May 15th his friends have been in daily expectation of his death. On July 16th I injected 8½ oz. of goat's milk into the median basilic vein of the right arm. The goat, which was brought into the bedroom, was not milked until the vein was raised, and Dr. Collins, who assisted me, tested the milk as it left the udder, and found it distinctly acid. Immediately on being milked, 10 grains of carbonate of ammonia were added to 10 oz. of the milk. The operation *was not followed by any disturbance of the respiration*, but the pulse became much stronger, and the temperature rose two degrees. Since the operation the patient has become materially improved.

The history of intravenous injection of milk is not without interest. Dr. Edward M. Hodder, of Toronto, Canada, was the first to perform the operation, and he was led to use it by the fact that Donné had without injury injected milk into veins of both dogs and rabbits. Dr. Hodder performed it in 1850 on three persons, moribund from Asiatic cholera, injecting as much as 14 oz. at one operation. Two of these cases recovered. Strange to say, for twenty years the operation was not repeated until in 1873 Dr. Joseph W. Howe, of New York, injected 6 oz. of goat's milk into the cephalic vein of a patient dying from tubercular disease of the stomach, and mesentery. The operation does not seem to have had any influence on the termination of this case, the patient having died four days afterward. In the following year a patient of Dr. Gaillard Thomas, of New York, who was fast dying of hæmorrhage from the uterus after ovariotomy, was saved by the injection of 6 oz. of milk. It was next performed by Dr. Howe in a case of phthisis, but the patient died comatose in four hours after the operation. Some time later he transfused 4 oz. of goat's milk into the veins of a woman far advanced in phthisis, complicated with syphilis, and this operation was followed by marked improvement. Subsequently, Dr. Thomas had other patients, making in all three cases and seven operations performed by him. Drs. John H. Brinton and Charles T. Hunter have also operated successfully on several cases. Dr. J. C. Hutchison and Dr. Bullard have each had one case. No European ones have been published.

The five cases which I have now read to this Association make twenty-two, the total number as yet on record. A careful analysis of these cases is most favorable to the operation. For this purpose I am disposed to divide them into four classes:

1. Those in which the operation cured the disease, which necessitated its performance.
2. Those in which the operation prolonged life.
3. Those in which the operation was productive of neither good nor evil.
4. Those in which the operation, in all probability, shortened life.

The first class includes eight cases; the second ten; the third two; and the fourth two.

The eight patients cured by the operation consist of two cases of Asiatic cholera, four of pernicious anæmia, one of impending death from hæmorrhage, and one of gastric ulcer. All these patients were in a hopeless condition, and the operation was only undertaken as *un dernier ressort*. In one of the cases of anæmia (Dr. J. Hutchison's) transfusion of blood had been first tried without the slightest benefit.

In the two fatal cases, the results may be traced to the fact that the milk was either acid or kept for too great a time before transfusion, or too large a quantity was injected.

It has been conclusively proved that if milk which has been kept for any considerable time be injected into the veins of dogs, it invariably proves fatal, whereas if used directly after being milked it can be injected with impunity.

The severity of the symptoms following the operation is in direct proportion to the quantity injected. Four ounces should, I believe, be the largest quantity injected at one time. As much benefit seems to follow the use of four ounces, and far less alarming symptoms than follow the use of a larger quantity.

I do not think it is necessary to strain the milk, if it be milked into a perfectly clean vessel, but I think it would be well to add a few grains of carbonate of ammonia to each injection. I did so in my three last cases.

It is not generally known that milk taken from some animals which have been confined for some weeks is slightly acid, even when it leaves the udder.

In three of the successful cases the milk was boiled before being used.

The presence of albumen, I think, is accidental. I found it in two of my cases, but then both patients had been taking considerable quantities of white of eggs to check diarrhœa.

In conclusion, I have only to add that unless future experience changes my ideas on this subject, after a careful consideration of the cases published, as well as from the experience of my own cases, I have made up my mind that I will not allow any patients under my care to die of exhaustion without an attempt to save them by the intravenous injection of milk, and I am strengthened in this resolution by the knowledge that out of twenty-two cases in which it has been resorted to, eight lives have been saved, and ten others prolonged by this operation.

Miscellany.

The French Association for the Advancement of Science.—This Association met at Montpellier during the first week in September last. M. Potain presided over the medical section. The work done before it was not considered very brilliant, although some valuable papers were read.

M. Livon presented the results of his researches on the "Physiological Action of Salicylic Acid." Large doses of this drug cause increase in the exhalation of carbonic acid; when pursued still further, there are tetanic contractions of the muscles, followed by paralysis of the same.

Dr. E. Seguin, of New York, advocated the universal adoption of the metric system, and gave a review of its present status.

M. Henrot advocated the use of small needles for puncturing the abdomen in cases of ascitis. He had had excellent results from their employment, and preferred them to the trocar.

M. Chalot advocated ignipuncture in the treatment of scrofulous arthritis. He punctures both fibrous and osseous tissues; he finds that the process has both a resolving and alterative action. He always keeps the joint perfectly immovable at the same time. This form of counter-irritation furnishes the best results when the arthritis has not arrived at the stage of suppuration and ulceration.

M. Brousse reported four cases of athetosis. Three of these were found to be suffering from cerebral atrophy; in one chorea was associated with the athetosis. M. Brousse believed that the cases proved that there was a relation of cause and effect between cerebral atrophy and athetosis.

M. Hortolis read a memoir upon the comparative value of ether and chloroform as anæsthetic agents. From a study of ninety cases he concluded that ether, when preceded by an hypodermic injection of chlorohydrate of morphia, was the surest and safest agent.

M. Teissier, Jr., reported twelve cases of disease of the right heart, developed after lesions of the stomach, liver, or intestines. The theory was proposed that this disease was due to irritation of the great sympathetic and sensitive filaments of the pneumogastric. By reflex action, the pulmonary vessels were constricted, thus throwing an increased amount of labor on the right heart.

M. Castan reported several cases showing the beneficial action of ergot in lithiasis.

At the business meeting of the section, M. Denucé, of Bordeaux, was elected president for the ensuing year. The next annual meeting will be held at Rheims.

Treatment of Hepatic Calculi.—Some very positive statements on this subject are made by Dr. T. H. Buckler, in the "Boston Medical and Surgical Journal." Referring to Dr. T. G. Thomas's enumeration of the operation of cutting into the gall-bladder as one of the recent surgical triumphs, he asserts that such a procedure is unwarrantable. Cholesteric gall-stones can always be dissolved away by large doses of chloroform, especially if combined with succinate of iron. The latter agent also may alone accomplish the desired solution and effect a cure. In Dr. Buckler's last three cases, treated successfully, he gave ten drops of chloroform every four hours, and a teaspoonful of Stewart's hydrated succinate of the peroxide of iron half an hour after each meal. He has sometimes given a teaspoonful of chloroform every six hours without causing any bad symptoms to the patients, and with the result of a cure within a week.

The succinate of iron contains, according to Dr. Buckler, more nascent, appropriable oxygen than any other known therapeutic agent, and is one of the best of the ferruginous preparations apart from its solvent power on the gall-stones. It is better than nitric acids in affections of the liver. Chloroform, we are told, on being swallowed passes to the acini of the liver, then with the bile to the gall-bladder, where it dissolves the gall-stones with the inexorable certainty of mathematics. Dr. Buckler's experience with ether and with the various mineral waters has led him to consider them of no value in this trouble.

Leprosy in America.—The Philadelphia "Medical and Surgical Reporter" has been discussing the danger from leprosy which exists in this country. There are colonies of lepers on the coast of New Brunswick; there are a number of cases in the Southern States, and many persons with the same disease have been introduced into California. It exists also in Japan, China, and the Sandwich Islands. There have been fifty cases of leprosy observed and recorded in the United States. By the side of these facts is put the opinion of a missionary in Trinidad, who has observed a great deal of the disease, and who believes very strongly that it is contagious in the full sense of the word. He shows that the disease does extend, and always has extended, in just the proportion that the leprous subjects have been allowed free intercourse with the uncontaminated persons around them. This view is shared by Dr. John D. Hillis, of British Guinea, in charge of the Government Hospital there. It is suggested that the United States may before long have to insist on absolute isolation of those affected with this terrible disease. The danger is probably a very remote one.

Carrier-Pigeons as Doctors' Assistants.—Dr. J. Milner Fothergill ("Philadelphia Medical Times") describes a novel use to which carrier-pigeons have been put. He was visiting a doctor-patient in Staffordshire, who was at the head of a firm of three physicians. One stayed at home and attended to the office-practice at the "surgery." The others drove about and visited the out-patients. Their drives were often very long ones, extending far up the hills which constitute the northern spurs of the backbone of England. A drive of forty miles was not very uncommon, consequently any sudden call, in busy times, had to be worked into the round, for a special journey could not possibly be devoted to one patient. The doctors, therefore, when starting, were in the habit of putting a bag containing carrier-pigeons into the gig. After seeing the patient, the prescription was attached to the pigeon, which was tossed up and reached home in a few minutes.

The Daily Ration.—Professor Church in his lecture at the National Training School for Cookery, on "A Day's Ration," gives some interesting results from the practical application of the usual dietary tables in times of famine. The average diet of an English soldier in time of peace is five ounces of albuminoids, three ounces of fat, twenty-two ounces of starch, one ounce of mineral matter, and about five pounds of water. It has been found, however, that the Indian in time of famine can live upon three ounces of albuminoids, one ounce of fat, eleven ounces and a half of starch, and two thirds of an ounce of mineral matter. This does not keep him in good working order, but it does keep him alive. It is to be remembered that the average English soldier weighs one hundred and fifty-four pounds, while the Indian weighs only one hundred and five pounds.

Examinations for Degrees in English Medical Schools.—The last statistics of the past examinations in the nineteen British medical schools shows the following percentage of rejections. The average of the rejections in the London schools is 31.3 per cent. That of the provincial schools is 35.6 per cent. The rejections at the primary examinations are about 30 per cent. There are very few American colleges that have so large a percentage as this, although exact statistics can not be obtained. In many large schools there is a desire to graduate as large a number as possible. The faculties hesitate to publish the number of applicants because they reject so few of them. There is a tendency just now, however, to increase their percentage of rejections.

State Medicine in Chicago.—The people of Chicago are having great trouble, according to the "Cincinnati Lancet and Clinic," in the enforcement of the sanitary laws regarding milk, water, meat, and scarlet fever. The Health Officer finds the milk diluted, and that the water requires filtering, for which latter purpose the people are using filters made of wire meshes and quartz grains. The meat has for some time been inspected, and kerosene oil poured over that which was condemned. This condemned meat was still sold, however, and even got on the Mayor's breakfast-table in the form of sausages. Now the authorities wish to take this meat and sell it to the rendering companies. The order compelling persons who have scarlet fever in the house to hang a red placard on the door has created much opposition and is often evaded.

Hypertrophic Paralysis.—At a recent clinical lecture delivered at St. John's Hospital, St. Louis ("Cincinnati Lancet and Clinic"), Dr. Kingsley presented two cases illustrating the above very rare affection. Only a dozen cases have previously been reported in this country. Those of Dr. Kingsley were very typical, showing the waddling gait, enlargement of the calves, and incurvation of the spine, peculiar to the affection. A remarkable feature of these cases was also the fact that they were both girls, nearly all the previous cases having been boys. There was no history of heredity.

Stammering.—M. Chervin read a paper on this subject at the last meeting of the International Medical Congress. From an extended study of the affection, he comes to the conclusion that it is, in most cases, due to a central lesion which causes a deficiency in the power of coördinating the muscles of speech. His treatment is, first, a week of complete silence, then to make the patient read aloud slowly for a time, then to make him speak very slowly, gradually increasing the rapidity of utterance. With this plan he claims to have had uniform success.

Substitute for Cod-liver Oil.—Dr. Thomas A. Emmet, in his recent work on the "Principles and Practice of Gynecology" recommends the fat of pork, properly prepared, as an excellent substitute for cod-liver oil. A portion of a rib, free from lean, is selected and soaked in water thirty-six hours to get rid of the salt. It is then boiled slowly, the water being often changed, until the meat is thoroughly cooked. It is to be eaten cold in the form of sandwiches, cut very thin. Thus prepared, it forms, according to Dr. Emmet, a very nutritious and concentrated article of diet, and one which can often be retained by irritable stomachs.

School of Practical Histology and Pathological Anatomy.—Dr. T. S. Satterthwaite, microscopist to the St. Luke's, and pathologist to the Presbyterian Hospital, opened a school of histology and pathological anatomy on October 1st. Dr. Satterthwaite is assisted by Dr. N. H. Porter, curator of the Presbyterian Hospital, and by Dr. Abraham Mayer. The latter gentleman gives a course on the normal and pathological anatomy of the eye and ear. Dr. Satterthwaite enjoys a high reputation, both as a microscopist and pathologist.

Jaborandi as a Galactogogue.—Dr. Sumrall reports to the Jersey County (Ill.) Medical Society that he has used jaborandi with a success as a galactogogue. The patient was the mother of three children, for none of whom had she secreted any milk. Her general health was quite poor. Immediately after labor, as there had been no filling of the breasts, five drops of fluid extract of jaborandi were given every three hours. Milk-fever came on in forty hours, and with it came a thorough and healthful establishment of the flow of milk.

Podophyllin in Cerebral Hyperæmia.—Dr. A. Overly Crist, of Indianapolis, in discussing the value of podophyllin, lays special stress upon its usefulness in cerebral congestion, or incipient inflammation of the meninges. It exercises, he says, a very complete and controlling influence over this pathological condition. When employed for such purposes, it must be given in moderately full doses, and continued for a considerable length of time.

Therapeutics in Germany.—According to a correspondent of the "Canada Medical and Surgical Journal," the modern treatment of disease in Germany is deteriorating. This assertion has been made before, but some statistics are now given to sustain it. Among others it is stated that, in Bamberger's clinic, of twenty-seven cases of pneumonia, seventeen died; twenty-four per cent. of all cases of typhoid fever die; facial erysipelas was frequently fatal.

Subcutaneous Osteotomy.—This operation, which has received great condemnation from some sources, is strongly endorsed by Mr. Parker, of the East London Children's Hospital, and by Dr. MacEwen, of Glasgow. These gentlemen report a large number of successful cases, with no fatal result. Mr. William Adams, of the London Hospital, has also done the operation with very successful results, although he does not believe it advisable in very young children.

University of Maryland.—Professor Frank Donaldson, of the Medical Faculty of the University of Maryland, has exchanged the Chair of Anatomy and Physiology for that of Clinical Professor of Diseases of the Throat and Chest. Professor F. T. Miles will fill the Chairs of Physiology and Anatomy, in addition to his duty as Clinical Professor of Diseases of the Nervous System.

Hospital Surgeons and Obstetric Practice.—A "National Association" has been formed in England for the purpose of securing the prohibition of medical men engaged in hospital practice, or the treatment of contagious diseases, from attending obstetric cases. The aims thus sought for are rather radical, and it is very unlikely that anything will be accomplished, although there is an element of justice in their demand.

The Electrical Polyscopes.—A set of instruments called by this name were shown to the International Medical Congress, by M. Trouvé, of Paris. He states that by them the interior of the stomach and bladder can be illuminated and examined with great completeness. Dr. Witsche, of Germany, has invented similar instruments, by which he claims to have attained the same results.

St. Mary's Hospital for Women.—The corner-stone of the new building for this hospital was laid in Brooklyn, October 13. It is a Catholic institution, and was founded in 1868. The new structure will be one hundred and fifty-seven feet long by two hundred and twenty-nine deep, and will occupy nearly a whole block.

Medical College of Ohio.—At a recent meeting of the Board of Trustees of the Medical College of Ohio, Dr. James G. Hyndman was appointed Lecturer on Medical Chemistry. Dr. Hyndman has been for eight years connected editorially with the "Cincinnati Lancet and Clinic."

Philadelphia College of Pharmacy.—This institution has recently conferred the title of Emeritus Professor of Chemistry upon Robert Bridges, M. D. It has also appropriated an annual donation of one thousand dollars as a token of regard for his past services.

Appointments, Honors, etc.—Dr. M. D. Mann, of Hartford, has been appointed Clinical Lecturer on Gynecology in this school. Dr. A. B. Cook has resigned his professorship in the Kentucky School of Medicine.

Journalistic Notes. — Dr. E. S. Gaillard, editor of the "Richmond and Louisville Medical Journal" and the "American Medical Biweekly," has removed to this city, and intends publishing both journals here.

London Medical Schools.—Nearly eight hundred new students have matriculated this fall in the eleven medical schools of London.

Errata.—On page 350, "New York Medical Journal" for October, for *felotomy* read *feletomy;* and on page 357, for *felotomical* read *feletomical.*

Deaths from Chloroform.—On Monday week an inquest was held at Ashton-under-Lyne, by the district coroner, on the body of a young lady named Mary Handford. The deceased had been suffering from a tumor upon her breast, and by the advice of her medical attendants, Dr. Gardiner and Mr. E. Lund, Professor of Surgery at Owens College, Manchester, she consented to have it removed. The two gentlemen named attended at her house on Saturday for this purpose, and Dr. Gardiner administered the chloroform by means of an inhaler. She had inhaled the anæsthetic for only about two minutes, and had not passed into the second stage of narcosis, when her pulse became feeble and she died. Both medical men had previously given it as their opinion that she was a fit subject to receive chloroform. The verdict was one of "death by misadventure."

On Wednesday week Dr. Hardwicke held an inquiry at Tottenham Court Road as to the death of Harry Knowlton, aged six years, son of a smith, who died in University College Hospital, while under the influence of chloroform. For two years past he had been under treatment in different hospitals for contraction of the sinews of the legs. On Thursday, Mr. Marshall, the senior surgeon, performed an operation on him, and the next day it was decided that splints should be placed on his legs. Chloroform was given to the child, and he was about to be operated on when it was noticed that he had ceased to breathe. Artificial respiration was resorted to, but without success. The jury returned a verdict of "death from misadventure."—"Medical Press and Circular," October 22, 1879.

The Late Dr. Eugene Peugnet, of Fordham, N. Y.—At a special meeting of the Yonkers Medical Association, held October 12, 1879, the following minute was adopted; a copy was ordered to be sent to the family of the deceased, and to be published in the medical papers:

"The Yonkers Medical Association desire to express their deep sense of the loss they have suffered in the death of Eugene Peugnet, M. D., of Fordham, N. Y., a member of the Association, who has so suddenly been taken from our midst, and to put upon record also their appreciation of his character as a man, and of his marked professional attainments. He was ever a regular and faithful attendant upon the meetings of the Society, and was always ready to do his part, contributing largely to their scientific interest. By his eminent ability and peculiar qualification as a surgeon, he gave to the meetings a superior tone and dignity. He exhibited a rare example of one whose interest and aim were directed toward elevating the character of the profession which he so dearly loved. We desire as a body to offer, to those whose home his death has made desolate, our sincerest sympathy, and to make our prayer that He who has visited them with trouble would look with pity upon their sorrows, would remember them in mercy, and comfort them with a sense of His goodness, lifting up His countenance upon them and giving them peace.

R. A. Joyce, M. D.,
Archibald M. Campbell, M. D.,
F. S. Grant, M. D.,
Committee."

The Anæsthetic Mixture at St. Bartholomew's Hospital.—At St. Bartholomew's, adult patients are not chloroformed, but are anæsthetized with a mixture of ether and nitrous oxide. It is claimed that the mixture works more quickly and with less discomfort than pure ether. It is given with an inhaler which consists of a mouth-piece connected by a rubber-tube with a reservoir containing the anæsthetic, and arranged so that any desired amount of air can be admitted. Chloroform is given to patients under fourteen years of age.—"Boston Medical and Surgical Journal."

Virchow.—Professor Virchow has gone to London to assist Dr. Schliemann in completing the inspection of the collections of the latter gentleman from the Troad, now in the South Kensington Museum. Virchow will furnish a chapter in the forthcoming work of Dr. Schliemann. It will give the ethnographic and geological investigations made by him in his recent visit to the seat of Schliemann's excavations in the Troad.—"Boston Medical and Surgical Journal."

Russian Medical News.—A recent report on the sanitary state of the province of St. Petersburg, exclusive of the capital, states that the *personnel* consists of twenty-six physicians, five assistants, seventy-two health officers, four medical women, and twenty-four midwives, among a population of 571,000. This is insufficient for the needs of the province.—"Lancet."

Koebler's Treatment for Metrorrhagia.—Professor Koebler, having had long experience in this form of treatment, recommends hot applications to the head in uterine hæmorrhages. He uses bags of sand of such high temperature that the hand can hardly bear it, although easily tolerated by the patient. In any form of acute anæmia the treatment is equally successful. Hot oats would answer as well, and be much lighter.—"Canada Medical and Surgical Journal."

Cæsarian Operations in Louisiana.—Dr. Robert P. Harris, who has been collecting statistics of Cæsarian operations in Louisiana, states that this operation has been done twenty times in that State. Fifteen women were saved; twelve children were delivered alive, of whom two died soon afterward. —"New Orleans Medical and Surgical Journal."

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department, United States Army, from October 14 to November 13, 1879.

SUTHERLAND, CHARLES, Colonel and Surgeon.—Having reported at Division Headquarters as Medical Director of the Division, is assigned to duty at the Presidio of San Francisco, Cal., from this date. S. O. 134, Division of the Pacific and Department of California, October 24, 1879.

KING, WILLIAM S., Lieutenant Colonel and Surgeon.—The extension of his sick leave of absence granted him March 6, 1879, from A. G. O. is further extended six months on account of sickness. S. O. 254, A. G. O., November 8, 1879.

IRWIN, B. J. D., Major and Surgeon.—Having reported for duty at these Headquarters, he is assigned to duty at Fort Meade, D. T. S. O. 116, Department of Dakota, October 21, 1879.

WOLVERTON, W. D., Major and Surgeon.—Assigned to duty at Fort A. Lincoln, D. T. S. O. 115, Department of Dakota, October 18, 1879.

HORTON, S. W., Major and Surgeon.—To proceed from Omaha, Neb., to Rawlings, Wy. T., and report in person to the Department Commander. S. O. 91, Department of the Platte, October 11, 1879.

GIBSON, J. R., Major and Surgeon.—Having reported at these Headquarters, to proceed to Fort McHenry, Md., and report to the Commanding Officer for duty. S. O. 192, Department of the East, October 28, 1879.

Tremaine, W. S., Captain and Assistant Surgeon.—The leave of absence on Surgeon's certificate of disability granted him in S. O. 214, October 27, 1879, from Headquarters Department of the Missouri, is extended two months on Surgeon's certificate of disability. S. O. 255, A. G. O., November 11, 1879.

Caldwell, D. G., Captain and Assistant Surgeon.—Upon withdrawal of troops from Fort Independence, to report to Commanding Officer Fort Warren, Mass., for duty as Post-Surgeon. S. O. 165, Department of the East, October 20, 1879.

Vickery, R. S., Captain and Assistant Surgeon.—Assigned to duty at Fort D. A. Russell, Wy. T. S. O. 92, Department of the Platte, October 11, 1879.

Middleton, P., Captain and Assistant Surgeon.—Assigned to temporary duty as Post-Surgeon at the Post of San Antonio, Texas. S. O. 211, Department of Texas, October 7, 1879.

Kimball, J. P., Captain and Assistant Surgeon.—Confirms order of October 1, 1879, directing him to proceed to Rawlins, Wy. T., for duty in the field. S. O. 91, C. S., Department of the Platte.

Munn, C. E., Captain and Assistant Surgeon.—To take Post at Fort Hays, Kansas, and, after reporting there, to proceed to Fort Garland, Col., and report to Colonel MacKenzie, 4th Cavalry, for duty with the column now organizing there. S. O. 217, Department of the Missouri, October 30, 1879.

DeWitt, C., Captain and Assistant Surgeon.—Confirms order of October 1, 1879, directing him to proceed to Rawlins, Wy. T., for duty in the field. S. O. 91, C. S., Department of the Platte.

Elbrey, F. W., Captain and Assistant Surgeon.—Relieved from duty in Department of the South, and to report in person to the Commanding General Department of the Missouri for assignment to duty. S. O. 254, C. S., A. G. O.

Byrne, Charles B., Captain and Assistant Surgeon.—Relieved from duty in Department of Texas, to proceed to New York City, and, on arrival, report by letter to the Surgeon General. S. O. 285, C. S., A. G. O.

Hoff, J. V. R., 1st Lieutenant and Assistant Surgeon.—When relieved by Assistant Surgeon Shufeldt, to comply with orders from A. G. O. in his case. S. O. 98, C. S., Department of the Platte..

Turrill, H. S., 1st Lieutenant and Assistant Surgeon.—Relieved from duty at Fort Columbus, N. Y. H., and assigned to duty at Madison Barracks, Sackett's Harbor, N. Y. S. O. 182, Department of the East, Oct. 16, 1879.

Comegys, E. T., 1st Lieutenant and Assistant Surgeon.—Assigned temporarily to duty as Post-Surgeon at Fort Duncan, Texas. S. O. 231, Department of Texas, November 3, 1879.

Kilbourne, H. S., 1st Lieutenant and Assistant Surgeon.—Assigned to duty as Post-Surgeon at Fort Porter, N. Y. S. O. 189, Department of the East, October 24, 1879.

Hall, William R., 1st Lieutenant and Assistant Surgeon.—Upon the termination of his services at Camp Winfield Scott, W. T., to proceed to and take station at Fort Cœur d'Alene, Idaho. S. O. 142, Department of the Columbia, October 10, 1879.

Porter, J. Y., 1st Lieutenant and Assistant Surgeon.—Granted leave of absence for five months. S. O. 254, C. S., A. G. O.

Shufeldt, R. M., 1st Lieutenant and Assistant Surgeon.—Relieved from duty at Fort Laramie, and assigned to duty as Post-Surgeon at Fort Fetterman, Wy. T. S. O. 98, Department of the Platte, October 29, 1879.

Appel, D. M., 1st Lieutenant and Assistant Surgeon.—Relieved from duty at Fort Stanton, and assigned to duty at Fort Bayard, N. M., as Post-Surgeon. S. O. 109, District of New Mexico, October 31, 1879.

Appel, A. H., 1st Lieutenant and Assistant Surgeon.—Assignment to duty at Fort Bennett revoked, and to repair to Fort Pembina, D. T., and report to the Commanding Officer for duty as Post-Surgeon. S. O. 118, Department of Dakota, October 27, 1879.

Richard, Charles, 1st Lieutenant and Assistant Surgeon.—Relieved from duty at Fort Buford, D. T., and to report to Commanding Officer at Fort Snelling, Minn., for duty at that Post. S. O. 124, Department of Dakota, November 2, 1879.

Obituary.

Dr. Oliver White.—On the 9th of November Dr. Oliver White died at his residence in this city, of valvular disease of the heart. He was born in Somers, N. Y., in 1810, graduated at the Yale Medical School, and came to New York City to practice medicine in 1831. Dr. White was one of the original founders of the Academy of Medicine, as also of the Society for the Relief of the Widows and Orphans of Medical Men. He was a member of the American Medical Association, and of the State Medical Society; at the time of his death he had been for many years a consulting physician to the Presbyterian Hospital; he was also on the consulting staff of the Northwestern Dispensary, and was a trustee of the New York Dispensary. His medical career in New York was that of an active, useful, and honorable man.

Dr. James Graham, Emeritus Professor of the Practice of Medicine at the Ohio Medical College, died September 1st, at the age of sixty-one. He was educated at Jefferson College, Pennsylvania, and graduated in medicine at the University of Pennsylvania. He occupied the chair of Practice in the Medical College of Ohio for twenty years, where he gained the highest reputation as a lecturer, and in particular as a clinical teacher. He had suffered for some years from Bright's disease and died of uræmia.

Dr. Eugene Peugnet.—On October 10th Dr. Peugnet, of Fordham, was run over by a train, and sustained injuries which caused his death within a few hours, his feet and ankles being completely crushed. Dr. Peugnet was born in 1837. He received part of his medical education in Europe, and first practiced, for several years, in New York city. He eventually removed to Fordham, where he practiced till the time of his death.

Dr. Nathan Wood Abbott, a prominent physician and a devoted student of science and philosophy, died in Chicago recently. He was one of the founders of the Philosophical Society of Chicago.

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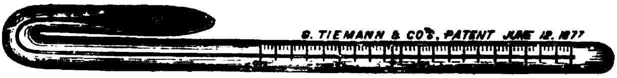
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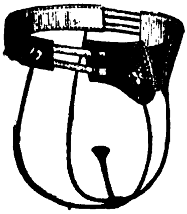

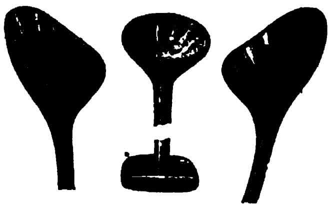

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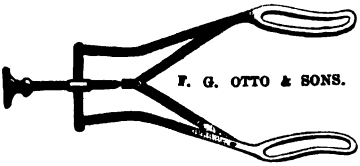

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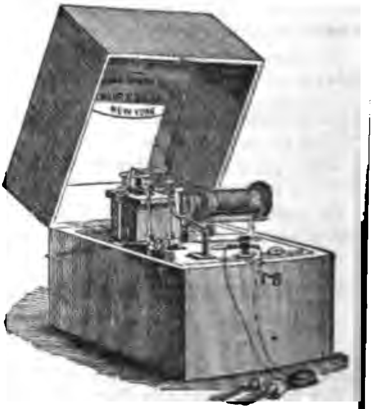

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